S. Hrg. 101-1179, Pt. 1

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1991

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

ON

H.R. 5769

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1991, AND FOR OTHER PURPOSES

Part 1 (Pages 1-1101)

Department of Agriculture
Department of Energy
Department of Health and Human Services
Department of the Interior
National Gallery of Art
Smithsonian Institution

Printed for the use of the Committee on Appropriations

U.S. GOVERNMENT PRINTING OFFICE
26-171
WASHINGTON : 1991

For sale by the Superintendent of Documents, Congressional Sales Office
U.S. Government Printing Office, Washington, DC 20402

S181-23

COMMITTEE ON APPROPRIATIONS

ROBERT C. BYRD, West Virginia, *Chairman*

DANIEL K. INOUYE, Hawaii
ERNEST F. HOLLINGS, South Carolina
J. BENNETT JOHNSTON, Louisiana
QUENTIN N. BURDICK, North Dakota
PATRICK J. LEAHY, Vermont
JIM SASSER, Tennessee
DENNIS DeCONCINI, Arizona
DALE BUMPERS, Arkansas
FRANK R. LAUTENBERG, New Jersey
TOM HARKIN, Iowa
BARBARA A. MIKULSKI, Maryland
HARRY REID, Nevada
BROCK ADAMS, Washington
WYCHE FOWLER, Jr., Georgia
J. ROBERT KERREY, Nebraska

MARK O. HATFIELD, Oregon
TED STEVENS, Alaska
JAMES A. McCLURE, Idaho
JAKE GARN, Utah
THAD COCHRAN, Mississippi
ROBERT W. KASTEN, Jr., Wisconsin
ALFONSE M. D'AMATO, New York
WARREN RUDMAN, New Hampshire
ARLEN SPECTER, Pennsylvania
PETE V. DOMENICI, New Mexico
CHARLES E. GRASSLEY, Iowa
DON NICKLES, Oklahoma
PHIL GRAMM, Texas

JAMES H. ENGLISH, *Staff Director*
MARY S. DEWALD, *Chief Clerk*
J. KEITH KENNEDY, *Minority Staff Director*

SUBCOMMITTEE ON DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES

ROBERT C. BYRD, West Virginia, *Chairman*

J. BENNETT JOHNSTON, Louisiana
PATRICK J. LEAHY, Vermont
DENNIS DeCONCINI, Arizona
QUENTIN N. BURDICK, North Dakota
DALE BUMPERS, Arkansas
ERNEST F. HOLLINGS, South Carolina
HARRY REID, Nevada

JAMES A. McCLURE, Idaho
TED STEVENS, Alaska
JAKE GARN, Utah
THAD COCHRAN, Mississippi
WARREN RUDMAN, New Hampshire
DON NICKLES, Oklahoma
PETE V. DOMENICI, New Mexico
MARK O. HATFIELD, Oregon
(Ex officio)

Professional Staff
CHARLES ESTES
SUE MASICA
RUSTY MATHEWS

Administrative Support
ELLEN DONALDSON

CONTENTS

MONDAY, FEBRUARY 26, 1990

Page

Department of Energy: Office of the Assistant Secretary for Conservation and Renewable Energy 1
Department of the Interior: U.S. Geological Survey 121

TUESDAY, MARCH 6, 1990

Department of the Interior: Bureau of Indian Affairs 253

TUESDAY, MARCH 20, 1990

Smithsonian Institution 375

TUESDAY, MARCH 27, 1990

Department of Health and Human Services:
  Public Health Service:
    Indian Health Service 477
Department of the Interior: U.S. Fish and Wildlife Service 627

WEDNESDAY, APRIL 18, 1990

National Gallery of Art 739
Department of the Interior: National Park Service 753

MONDAY, APRIL 23, 1990

Department of the Interior:
  National Park Service 877
  U.S. Fish and Wildlife Service 891
Department of Agriculture: Forest Service 903

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1991

MONDAY, FEBRUARY 26, 1990

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 9:08 a.m., in room SD–168, Dirksen Senate Office Building, Hon. Harry M. Reid presiding.

Present: Senator Reid.

DEPARTMENT OF ENERGY

OFFICE OF THE ASSISTANT SECRETARY FOR CONSERVATION AND RENEWABLE ENERGY

STATEMENT OF J. MICHAEL DAVIS, ASSISTANT SECRETARY FOR CONSERVATION AND RENEWABLE ENERGY

ACCOMPANIED BY:

B. REID DETCHON, PRINCIPAL DEPUTY ASSISTANT SECRETARY
ALAN J. STREB, DEPUTY ASSISTANT SECRETARY FOR CONSERVATION
FRANK STEWART, DIRECTOR OF STATE AND LOCAL ASSISTANCE PROGRAMS

OPENING REMARKS

Senator REID. The subcommittee will come to order.

This is the time scheduled for the Department of the Interior and Related Agencies Subcommittee to hear testimony from administration witnesses in support of the Department of Energy's fiscal year 1991 budget request for its energy conservation programs. Testifying on behalf of the budget request will be Mr. J. Michael Davis, Assistant Secretary for Conservation and Renewable Energy. Subsequently this morning we will be reviewing the budget request for the U.S. Geological Survey.

Before we begin with the conservation testimony, I would like to note that this is the Subcommittee on Interior and Related Agencies' first hearing on the fiscal year 1991 budget proposals from the administration. This promises to be another challenging year for the subcommittee. Many of the issues, such as the spotted owl controversy, the Arts matters, offshore oil and gas leasing, among others, will be the subject of intense debate again this year.

I will be chairing this hearing at Senator Byrd's request. The chairman is occupied with clean air issues, which are on the Senate floor again this week.

ENERGY CONSERVATION R&D

We will now turn to the budget request for energy conservation. This year's request of $212,591,000 for energy conservation programs represents a decrease of $198,943,000, or 48 percent, from the appropriation for the current year, which was $411,534,000.

Of the reduction which I just noted, the vast majority, some $187,465,000 reflects a sharp cut in the State and local grant programs, such as low-income weatherization. These grant programs have been reduced by 86 percent compared to the current level. Energy conservation research and development programs, as well, have been reduced by approximately 9 percent.

INTRODUCTION OF ASSOCIATES

We welcome you, Mr. Davis, before the subcommittee this morning. We have your prepared statement and it will be included in the record in its entirety. Also, as this is your first time testifying before the subcommittee, as is our custom, we'll insert a copy of your biography in the record.

If you would please introduce your associates who are here with you this morning and summarize your prepared remarks, we'll then move to the subcommittee's questions.

Mr. Davis. Thank you, Mr. Chairman.

I would like to introduce my deputy, Mr. Reid Detchon; Mr. Frank Stewart, who manages our State and Local Programs; and Mr. Al Streb, on my left, who manages our Conservation Programs.

NATIONAL ENERGY STRATEGY

I appreciate the opportunity to present the administration's fiscal year 1991 budget request. It's my first opportunity. We believe we are bringing you an R&D proposal that reflects a renewed commitment from the administration to energy efficiency and a commitment to that being an integral part of our national energy strategy.

The exact dimensions of the strategy are not yet clear, except in one respect: There will be an increased emphasis on the role of energy efficiency in meeting the Nation's future energy needs.

We face a need over the next 10 years for an additional hundred thousand megawatts—or more—of electrical capacity alone, not to mention growth in petroleum demand. Vigorous implementation at the Federal, State, and local levels of economically attractive advanced technology in energy efficiency could reduce the need by one-quarter to one-half.

Such an effort would have an energy benefit by reducing the need for new powerplants and their associated costs to consumers; an economic benefit by increasing our productivity per unit of energy, improving our international competitiveness and our standard of living; and an environmental benefit by reducing the atmospheric emissions associated with power production.

The budget request before you today is more than double the amount requested for fiscal year 1990 in conservation research and development. We have listened to the views of experts around the Nation, we have analyzed the contribution that energy efficiency has made to economic productivity, and we have responded with a renewed commitment to these programs.

This is a budget which is attentive to future market needs and opportunities; which is responsive to energy, economic, and environmental goals; which is balanced by end use and timeframe of delivery; and which will serve as a catalyst for progress in the private sector.

This request should be viewed as a foundation for the programs and policies which we expect to emerge from the national energy strategy. Last month, we announced a series of initiatives that we are beginning with fiscal year 1990 funds to focus our R&D effort on our highest priority projects; Deputy Secretary Moore described them as building blocks of the national energy strategy.

They include efforts to get efficient lighting technologies in Federal facilities and commercial buildings and to encourage energy efficient building codes; to accelerate the adoption of integrated resource planning by States, putting demand reduction on the same footing with acquisition of new supply.

Indeed, I would highlight this last initiative as a counter to those who would equate the level of Federal spending on conservation with the success achieved: what counts is not just what you spend, it's how you spend it. Improving the return on utility investments in energy efficiency will have a far greater impact on the actual implementation of such measures than almost anything we can do in the laboratory.

Mr. Chairman, my written statement provides additional detail on our plans for each program area, as well as the budget itself.

Let me say in conclusion we are proposing a balanced yet aggressive program in energy conservation. We have some exciting initiatives underway. We are redirecting our program to play the key role it deserves in our emerging national energy strategy and, together with our program in renewable energy, we are investing in critical components for our energy future.

We have tried to assess the relative benefits of these components and fund them accordingly, by end use and by timeframe. We will continue to improve our understanding of relative benefit with each succeeding year. Your support in providing the flexibility needed to manage the program, both in terms of prescribed personnel levels and funding constraints, is critical in this regard.

Our objective has been to bring forward an administration position that reflects common objectives, that recognizes the support and importance that Congress has given these programs and that maintains credibility in the process. We don't want to over or underreact to the opportunities and needs.

PREPARED STATEMENT

Without this approach by the administration, programs can become less efficient and, thus, more expensive than necessary. As we bring forth programs that reflect this common objective, we'll find more opportunities for cost sharing. We'll consider all approaches to solving needs, not just R&D but regulations as well as incentives. We can provide better leverage within the DOE programs, not just within the conservation and renewable energy program, and we can provide better leverage among all the Cabinet agencies to pursue these objectives.

I appreciate your attention and I will be pleased at this time to answer any questions.

[The statement follows:]

STATEMENT OF J. MICHAEL DAVIS

Mr. Chairman and members of the Committee:

I appreciate the opportunity to present the Administration's FY 1991 budget request of $212.6 million for Energy Conservation -- my first such opportunity since becoming Assistant Secretary. I am bringing to you an R&D request that reflects the renewed commitment this Administration is giving to energy efficiency as an integral part of our National Energy Strategy.

We are currently in the midst of developing that strategy, through a process of listening to the public in every part of this country -- a painstaking process that began last spring and that will continue through December of this year. An interim report, based on the extensive public input we have received, will be published in April and will be the subject of public review and comment through the spring and summer months.

Once completed, the National Energy Strategy will be an action plan that lays out specific actions we need to take, as a Department and a Nation, over the near-, mid-, and long-term, to secure the energy we need for a prosperous and growing economy.

The exact dimensions of that plan are not yet clear, except in one respect: There will be an increased emphasis on the role of energy efficiency in meeting the Nation's future energy needs. The consensus favoring energy efficiency as a critical piece of our National Energy Strategy has been overwhelming, and that fact is reflected in the budget proposal before you today.

You may note that I speak of energy efficiency and not of conservation. The reason for that is simple: To me, the word "conservation" implies doing without -- getting by with less heat, less light, less comfort -- and that is not our objective. Our objective is to provide all the heat, light, and comfort that we require and to use less energy in the process -- and that means energy efficiency.

Fifteen years ago, it was thought implausible and even impossible to separate energy use from economic growth. Since then, the performance of our economy has confounded the skeptics. Today, we use about seven percent more energy than we did in 1973, but we power an economy that is nearly 50 percent larger. We have 20 million more homes today, yet residential energy consumption is up, less than five percent. We have 50 million more vehicles on the road, but new cars are almost 90 percent more fuel-efficient than pre-1973 models. The cumulative energy savings we have achieved represent a gift to ourselves of over $900 billion since 1973. And yet the price of energy for American consumers remains far below the price paid in most other countries in the world.

Despite those gains -- and because of what we have learned since then -- it is just as clear today as it was in 1973 that energy efficiency has not reached its full potential and that large opportunities for further progress still remain. We face a need, over the next 10 years, for an additional 100,000 megawatts or more of electrical capacity alone -- not to mention growth in petroleum demand. Vigorous implementation at the Federal, State, and local levels of economically attractive advanced technology in energy efficiency could reduce that need by one quarter to one half. Such an effort would have an energy benefit -- by reducing the need for new power plants and their associated costs to consumers; an economic benefit -- by increasing our productivity per unit of energy, improving our international competitiveness and our standard of living; and an environmental benefit -- by reducing the atmospheric emissions associated with power production.

The budget request before you today is more than double the amount requested for FY 1990 in conservation research and development. We have listened to the views of experts around the nation, we have analyzed the contribution that energy efficiency has made to economic productivity, and we have responded with a renewed commitment to these programs. This is a budget which is attentive to future market needs and opportunities; which is responsive to energy, economic, and environmental goals; which is balanced by end use and time frame of delivery; and which will serve as a catalyst for progress in the private sector.

This request should be viewed as a foundation for the programs and policies which we expect to emerge from the National Energy Strategy. Last month, we announced a series of initiatives that we are beginning with FY 1990 funds to focus our R&D effort on our highest priority projects; Deputy Secretary Henson Moore described them as building blocks of the National Energy Strategy.

Let me take a moment to highlight our initiatives in energy efficiency:

o **Relighting Federal Facilities** -- The Federal government offers substantial opportunities for energy savings; it should be a leader in adopting new technology. We propose to form "energy efficiency teams" of engineers and design specialists, from both the public and private sectors, to audit certain targeted Federal buildings for retrofit with today's more efficient lighting technologies -- technologies that can reduce lighting costs by 25 percent or more. Where possible, we will encourage utilities to participate as partners, benefiting from the energy savings that are achieved and reducing the cost to the government.

We hope in turn to use these examples to encourage retrofits of other Federal facilities and of commercial and industrial lighting in the private sector. A 25 percent saving in lighting costs -- which we hope to achieve by the year 2000 -- would mean energy savings of $930 million annually to the Federal government and $5 billion to the private sector.

o **Integrated Resource Planning** -- This effort, begun several years ago as Least-Cost Utility Planning, is aimed at allowing energy efficiency investments to compete on a level playing field with conventional sources of energy supply. That means making it as profitable for utilities to reduce the demand for power -- for example, through incentives to consumers to use more efficient appliances -- as to build new capacity. Our investment in this program -- which involves working with the States and the Federal Energy Regulatory Commission to develop appropriate regulatory treatment of energy efficiency measures -- will be repaid many times over if the need for just one large power plant can be eliminated... and we expect many times that level of success.

Indeed, I would highlight this initiative as a counter to those who would equate the level of Federal spending on conservation with the success achieved: What counts is not just what you spend; it's how you spend it. Improving the return on utility investments in energy efficiency will have a far greater impact on the actual implementation of such measures than almost anything we might do in the laboratory.

o **Building Code Improvement** -- Building standards developed by DOE are mandatory for Federal facilities but voluntary for the private sector. Adoption of such standards would lead to a 25 percent improvement in the energy efficiency of new buildings -- buildings that will be using power for the next 50 to 75 years. We intend to encourage State and local governments, the regulatory authorities in this area, to adopt these model codes, and we will work with architects, engineers, and home builders to facilitate their use.

o **Energy Efficiency Engineering Centers** -- Our Energy Analysis and Diagnostic Center program operates at 13 engineering schools, giving students and faculty hands-on experience in performing energy audits of small and medium-sized manufacturers. A Federal investment of $11 million has yielded energy savings with a total value of $355 million; we propose to expand the program by three schools this year and three more in 1991.

The cost of all our initiatives in energy efficiency, including others in commercial lighting and the safe combustion of municipal waste, is modest -- $5 million in FY 1990, building on a program base of $8.4 million. In FY 1991 we are increasing the program base to $10.1 million and asking $8 million on top of that.

Now let me touch briefly on our major program areas:

o We are providing a substantial increase to our **Office of Buildings and Community Systems**. Our request of nearly $46 million is triple the level requested last year and 19 percent above the congressional appropriation. Our initiatives in lighting, building codes, and integrated resource planning fall within this area. In addition, we are integrating in this Office responsibilities previously assigned to the Solar Buildings program under Renewable Energy.

This Office also has the responsibility for supporting joint ventures in the areas of factory-made housing and advanced district cooling, as provided by S. 488, enacted as Public Law 101-218 in December -- the Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989. We are working now to develop an implementation plan for this legislation and to ensure that we have the information we need to proceed with confidence.

o Our $40 million request for the **Office of Industrial Programs** is two and a half times our request last year, but is $10 million below the congressional appropriation. This reduction is largely due to the one-time funding spike caused last year by the ramp-up of the Metals Initiative.

o Similarly, the Office of Transportation Systems, at $56.6 million, is almost double last year's request but approximately $8 million below the appropriation. Here the difference is due to two decisions -- to request funding for only one automotive gas turbine team, and to narrow our development process to the three most promising battery couples for electric vehicles.

The turbine decision was a hard one, affecting a successful program of R&D; but we concluded that we need only one development path to meet our research objective, which is proof of concept. Therefore, we propose to put our two industrial partners into competition for the funding, based on the level of cost sharing available: We will either support one effort at the current cost-sharing level or continue both paths if the level of cost sharing is increased.

I might add that this decision, together with the reduced funding needs of the Metals Initiative, more than accounts for the difference between last year's appropriation for conservation R&D and this year's request. Indeed, I would strongly suggest that we are proposing not just a steady-state budget, but one that will produce more results by proceeding in a more focused way.

For example, in the case of battery development for electric vehicles, we concluded that we were diffusing our research effort over too many options and decided to concentrate on zinc-bromine, sodium-sulfur, and lithium-metal sulfide as the couples most likely to succeed.

o In the multi-sector Office of Energy Utilization Research, we are asking $32 million -- a one-third increase over last year's request, but $4 million below the congressional appropriation. The reduction is caused by a scaling down of materials investigations in this basic research area as the results are picked up within the applied research programs in Industry and Transportation -- exactly the supportive process that we expect to occur in this program of cross-cutting fundamental research.

o Finally, let me turn to our State and Local Assistance Programs, for which we are asking $30 million. We are committed to the continuation and revitalization of State energy conservation and weatherization efforts, and our budget request, as I will explain, supports that.

In recent years, the States have received more than three and a half billion dollars in restitutionary funds from petroleum overcharge violations; more than half of these funds remain unexpended. In every one of the 50 States, the amount of funds that remains unexpended exceeds the total of their program grants in the current fiscal year, and in all but two States, the amount remaining is twice the total of their program grants.

We have budgeted enough for Program Direction to manage a program funded at current levels, but we have chosen to leave to the States the level of resources that they wish to commit. At a time of fiscal constraints we think it is inappropriate to put forth $200 million in Federal resources in additional State aid.

However, we are proposing to make available $15 million in grants to encourage innovative approaches in weatherization assistance, particularly in attracting non-Federal resources to the program. Attracting such funds, as for example through utility programs developed through an integrated resource planning process, will strengthen the long-term vitality of the program. In addition, we are undertaking a major evaluation of the size and persistence of the energy savings achieved by the program. The results could contribute significantly to improving the program's effectiveness.

Mr. Chairman, in conclusion, we are proposing a balanced yet aggressive program in energy conservation, and we have some very exciting initiatives under way. We are redirecting our program to play the key role it deserves in our emerging National Energy Strategy, and together with our program in renewable energy, we are investing in critical components of our energy future.

We have tried to assess the relative benefit of these varied components and fund them accordingly, by end use and by time frame. We will continue to improve our understanding of relative benefit with each succeeding year. Your support in providing the flexibility needed to manage the program, both in terms of prescribed personnel levels and funding constraints, is critical in this regard.

I appreciate your time and attention, and I would be pleased at this time to answer any questions you may have.

Thank you very much.

BIOGRAPHY OF J. MICHAEL DAVIS

J. Michael Davis was sworn in on October 6, 1989, as Assistant Secretary for Conservation and Renewable Energy, U.S. Department of Energy (DOE). The Office of Conservation and Renewable Energy conducts research and development programs in energy efficiency and renewable energy for buildings, industry, transportation and utilities. Its programs in renewable energy resources involve research in active and passive solar, photovoltaic, wind, ocean thermal, geothermal and biomass technologies.

The Office also administers Federal grant programs for low-income home weatherization and energy efficiency improvements in schools and hospitals, and coordinates management of three of the five federal power marketing administrations.

Since 1982, Davis has owned and operated private businesses providing solar and energy efficiency products and services in Denver, Colorado.

Earlier, he held positions with the Solar Energy Research Institute in Golden, Colorado, as Manager of Planning and Special Programs; Acting Associate Director for Analysis and Applications; and Buildings Division Manager from 1980 to 1982. At DOE Headquarters, he served as a manager in the solar program from 1977 to 1980.

Davis is a distinguished graduate of the U.S. Air Force Academy (B.S. 1969) and the University of Illinois (M.S. 1970). He served in the Air Force from 1969-1977, and received the Bronze Star and the Vietnam Honor Medal. Davis is also a registered Professional Engineer.

Davis lives in the Washington suburb of Alexandria, Virginia, with his wife and four children.

BIOGRAPHY OF B. REID DETCHON

Reid Detchon is the Principal Deputy Assistant Secretary for Conservation and Renewable Energy, U.S. Department of Energy (DOE). He has held this position since April, 1989.

The Office of Conservation and Renewable Energy performs research and development in energy efficiency and alternative energy sources for vehicles, buildings and industry, including solar energy, photovoltaics, wind, geothermal and biomass technologies. The Office also is responsible for administering grant programs for weatherization assistance and state energy planning.

Previously to serving as Principal Deputy Assistant Secretary, Detchon led DOE's transition team for the President-elect. In the 1988 presidential campaign, he worked as a speechwriter for Vice President Bush. From 1987 until 1988, he served as Assistant for Communications to the Vice President.

Detchon also spent five years with Senator John C. Danforth (R-MO), serving first on the Senate Committee on Government

Affairs staff and later as the Senator's legislative director, with a particular concentration on energy and environmental issues.

A 1970 graduate of Yale University, where he majored in American studies, Detchon worked as a sportswriter for the Baltimore Evening Sun and as a reporter and Washington correspondent for the Columbia Daily Tribune in Missouri. In 1979, he was named "Washington Correspondent of the Year" by the National Press Club.

Detchon lives in the Washington suburb of Bethesda, Maryland, with his wife and three children.

CURRENT ENERGY SITUATION

Senator Reid. I would like to begin the questions this morning with a discussion of the Nation's current energy situation, the contribution which energy conservation has made to date, and the potential which your energy conservation programs have for alleviating energy shortages and reliability problems in the future.

Mr. Davis, clearly our Nation's domestic energy supply trends are worsening each year. In fiscal year 1989, for example, our net petroleum imports averaged 7.2 million barrels per day—that's 7 days a week—which is up more than 9 percent from the prior year. The Department's Energy Information Administration predicts that we will be importing more than one-half of our oil requirements within the next 5 years. There are some statistics that have us importing more than that now.

Under these circumstances, isn't it more imperative than ever that we develop substitute fuels, especially for oil, and that we use our existing fuels more efficiently than ever before?

Mr. Davis. Senator Reid, that's certainly correct, and there is a number of avenues that we can use to approach that. In the past, we've looked at increased efficiency, certainly with engines. Increased efficiency at a time when we're trying to keep the emissions basically flat. Now we're looking at increasing efficiency as well as decreasing emissions.

We're also looking at trying to bring forward a number of different fuels, alternative fuels to petroleum. We're also trying to bring together the necessary data—and I think this is a very fundamental activity and very important—both performance and emissions data, so that we'll know what performance and emissions truly are associated with the different alternative fuels that we examine. And as we bring that data into better view, I think it will make a number of our future decisions certainly more efficient as to where we make investments.

Senator Reid. In looking at your resume, it indicates you've spent significant time working in the solar field, is that right?

Mr. Davis. That's correct.

Senator Reid. Yet in your statement I see nothing relative to that. Why is that?

Mr. Davis. Well, most of our renewable activities fall within the boundary of the energy and water appropriations.

Now, we are trying to create a little bit different view with respect to both energy efficiency and renewables. In my view, if you look at these opportunities by sector, by buildings, by transportation, by industry, what you'll see is that renewables really are supply opportunities, additional sources of energy supply. And to my mind, what we used to call conservation—which I'd rather call energy efficiency—are demand reduction opportunities.

I've been personally involved in both supply and demand reduction opportunities in my professional life. And I think that if we can bring them both together and, for the first time, give equal weight to supply as well as demand reduction opportunities, we can make a better case for where our investments need to be.

ENERGY SAVINGS

Senator **Reid**. Do you have a dollar estimate of the savings attributable to energy conservation in the United States during the last decade?

Mr. **Davis**. It appears that over about a 15-year period we've written ourselves a check for about $900 billion, since 1973.

Senator **Reid**. But how much of this amount results specifically from energy efficiency improvements?

Mr. **Davis**. I would say that there's been a lot of discussion on that point. Most people will assert that at least one-half of that is due to efficiency improvement, the other one-half of it is generally associated with changes in the industrial structure of the country.

ENERGY EFFICIENCY

Senator **Reid**. Is there still a great deal of capital investment in energy efficiency that is possible and which is economically justified under current U.S. energy prices? Could you quantify this potential investment and the related energy savings in rough terms?

Mr. **Davis**. Overall, studies estimate that the United States can conserve an additional 9 to 26 quads of energy each year by the year 2000. Our knowledge of the current stock of energy-consuming devices, however, is not adequate to estimate the magnitude of potential savings precisely. We are working with the Energy Information Administration to obtain better data on current stock efficiencies.

A great amount and variety of conservation activity and investments have already taken place. Unfortunately, many consumer and corporate investments have required high rates of return, often less than 2-year paybacks, to justify energy efficiency investments. Current low energy prices reduce the motivation for taking further, more costly measures.

ENVIRONMENTAL BENEFITS OF CONSERVATION

Senator **Reid**. As we've already indicated, that's the reason for Senator Byrd's absence, Congress is presently considering major modifications to current clean air laws. Many of the programs you offer deal with solutions to clean air problems by enhancing energy efficiency or by developing cleaner alternatives to existing technologies and applications.

Would you give the subcommittee an overview of the projects under your jurisdiction which enhance air quality?

Mr. DAVIS. Again, maybe I can address those by end use.

In the buildings area, you'll see that we have focused an effort on what we refer to as integrated resource planning. It's really an attempt to use the utility industry to deliver a substantial amount of energy efficiency. And to the extent that we can enhance energy efficiency, that certainly has a beneficial impact on emissions.

The same is true in the transportation sector. As we're able to develop alternative fuels, as we're able to develop more efficient engines that have better emission characteristics, that as well will have a positive impact on emissions and clean air. I would like to provide additional information for the record.

[The information follows:]

ENVIRONMENT

- The mission of CE is to support research, development and demonstration activities that bring new cost-effective, energy efficient and renewable technologies to commercialization, the administration of regulatory programs, the issuance of grants to State and local governments, and the guidance of three power marketing administrations that deliver electrical services to utilities and direct customers. All the components of this mission enable CE to have major impacts on the energy-use patterns that influence global climate change.

- CE is also responsible for the Federal Energy Management Program, which monitors and reports to Congress on the energy use of all Federal Government activities and provides technical assistance designed to increase Federal energy efficiency and reduce energy costs.

- Conservation Programs. These activities are organized under building, industry and transportation sector programs and cross-cutting research.

- Building and Community System (BCS) Programs. The U.S. uses 37 percent of its energy to provide services in residential and commercial buildings. The BCS programs are directed at improving the energy efficiency--and consequently reducing the adverse environmental impact--of this energy through research and regulatory activities.

  - Building systems research improves the thermal performance of the building envelope, reducing the energy required for heating and cooling. Collaborative work with industry is developing alternatives to chlorofluorocarbons (CFCs) as a blowing agent for insulation.

  - Building equipment research is increasing the efficiency of heating, cooling, refrigeration, lighting and other equipment in residential and commercial buildings. In the Advanced Refrigeration Systems key activity, there are four projects which enhance air quality or reduce other forms of pollution.

    - A major cooperative effort with ARI to implement a comprehensive research program to develop materials and lubricants compatible with the leading non-CFC refrigerants.

    - Development of an innovative compact vacuum insulation concept at SERI. In working with industry, SERI has fabricated sufficient quantities of prototype insulation panels to have three manufacturers test the panels in their refrigerators.

    - An effort with the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) in formulating the engineering properties of the leading refrigerant alternatives and in testing many of these leading refrigerants in refrigerators.

    - A cooperative project with the Association of Home Appliance Manufacturers (AHAM) in developing refrigerant and insulation alternatives for the CFCs now being used in refrigerators and freezers.

  - Community systems research is attempting to lower the cost and increase the performance of district heating and cooling systems. When such systems are combined with electricity production in a cogeneration mode, efficiencies can be achieved that are more than twice as great as those typically achieved for electricity-only plants. Emissions are also reduced through the replacement of numerous individual building heating systems with larger plants having emission controls.

  - The Least-Cost Utility Program serves as a catalyst to electric and natural gas utilities and State public utility commissions to increase support for energy-efficiency programs. The Department is beginning work on a total fuel cycle cost analysis methodology which, when developed, could be used in making policy and management decisions.

o Industrial Programs. Industrial energy consumption accounts for 37 percent of the nation's total energy use. Research is directed at improving energy efficiency--which reduces the environmental impact of the uses.

  A projection of the energy savings attributable to successful completion of the R&D projects presently underway in the Office of Industrial Programs, measured in the year 2010, is an estimated 5 quads/year.

  - Industrial processes release large quantities of waste heat. Research is directed at recovering some of the 1.5 to 3.0 quads of thermal energy wasted in industrial processes. Biotechnology that converts food wastes to higher value plastic will relieve the environmental problems associated with disposal of these wastes. The Brayton solvent recovery equipment captures, for re-use, volatile organic compounds including chlorofluorocarbons.

  - Industrial cogeneration, the simultaneous generation of process heat and electricity, has a vast potential for reducing the use of combustion equipment in industrial operations as well as reducing waste material streams. The Department is conducting research in load flexibility, high power-to-thermal ratio prime movers, fuel flexibility, and increased efficiency.

  - Improvements in the energy efficiency of the most energy-intensive industries can produce energy savings and improve the competitiveness of U.S. companies. For example, research is conducted in the steel industry on "leapfrog" technologies such as the direct production of steel from iron ore, which would replace the blast furnace in steel-making, with accompanying substantial decreases in emissions.

o Transportation Systems. Transportation uses 26 percent of the nation's energy. Research programs that seek to increase the efficiency and fuel flexibility of this energy use provide indirect benefits in terms of emissions and air quality. Transportation contributes almost 75 percent of carbon monoxide emissions in the United States, almost 50 percent of the nitrogen oxides, over 30 percent of the volatile organic compounds, and over 20 percent of the particulates. Since the transportation programs have as their goals either improvements in efficiency of at least 30 percent and/or substitutions of petroleum-based fuels with less polluting alternative fuels, successful commercialization of the technologies under development will result in major reductions in emissions.

- Automotive propulsion research advances promising technologies that are too high risk or long term to be pursued by the automobile companies on their own. These technologies include the automotive gas turbine and heavy duty diesel engine.

- Research on alternative fuels seeks to provide increased fuel flexibility in the future. Current emphasis is on biomass-derived fuels.

- Electric vehicles offer another path to increased fuel flexibility. The primary research focus is on battery and storage system technologies. Since electricity may be derived from combustion fuels such as coal, which produce CO_2, or from sources such as hydroelectricity or nuclear power plants, which don't, the environmental consequence will vary depending upon the location and time that the batteries are charged.

- About one-sixth of the U.S. CFCs are used to charge automobile air-conditioning systems. DOE is supporting research to identify design changes, such as "smart glazings" that reduce heat build up and consequently reduce air-conditioning and CFC needs.

o **Multi-Sector Programs**. Cross-cutting research in Energy Conversion and Utilization Technologies (ECUT) bridges the gap between advances in the basic sciences and end-use sector applications. A number of ECUT activities contribute to the mitigation of energy-related environmental impacts. For example, the ECUT materials program is exploring possible approaches for plastics recycling as well as the development of bio-based materials to replace energy intensive and environmentally incompatible synthetic plastics.

  - ECUT combustion research has resulted in the development of a process to reduce nitrogen oxide emissions from diesel engines. Continuing research on combustion-related processes will provide capabilities that may be exploited to overcome technical and environmental limitations of combustion systems such as automotive engines, furnaces, boilers, and incinerators.

  - ECUT thermal sciences research is working to develop technologies based upon magnetic and chemical energy conversion principles that do not use chlorofluorocarbons (CFC's). Research will lead to the development of heat engines, heat pumps, and refrigeration technologies that use environmentally safe, energy-efficient working media to meet acceptable performance criteria without contributing to ozone depletion.

  - ECUT catalysis/biocatalysis research is investigating the feasibility of chemical and biological methods of carbon dioxide (CO_2) and methane removal. The research currently focuses on: modifying the carbon dioxide-fixing enzyme of microalgae and reinserting the enzyme into the organism for increased efficiency of CO_2 removal; designing more efficient photobioreactors for improved production of microalgae; developing chemical catalysts for CO_2 removal; investigating the electrocatalyzed enzymatic removal of CO_2; and developing methane-removing catalysts modeled after the enzyme methane oxidase. These processes may then be applied to concentrated emissions streams from power plants and municipal solid waste facilities.

o **Renewable Energy Programs**. The renewable programs obtain energy from an array of natural sources that do not require the combustion of fossil fuels and the related creation of CO_2. The activities include broad research programs, which create environmental benefits by providing alternatives to fossil fuels and targeted programs that relate more directly to this environmental goal.

- Broad programs directed to the development of renewable resources are:
  - Solar thermal energy systems which concentrate the sun's radiation to generate electricity, produce high temperature process heat, and provide high radiant flux for use in various chemical reactions and production of transportation fuels.
  - Solar buildings technologies which capture and convert sunlight into useful heat by using discrete collection, storage, and distribution elements (active systems), or by using the building structure itself (passive systems).
  - Photovoltaic energy systems which convert sunlight directly into electricity using solid state materials and technology.
  - Wind energy systems which convert the energy in moving air into electricity using rotating wind turbines.
  - Ocean energy technology programs which pursue cost-effective ways to harness ocean energy.
  - Biofuels and municipal waste programs which are versatile, reliable, and renewable contributors to the U.S. energy supply, currently providing about 3 quads of energy annually, mostly in the form of heat and electricity.
  - Geothermal energy programs which use the heat retained within the earth, a virtually inexhaustible source that has few environmental effects, and at many sites is economically competitive in costs.
- Renewable Energy studies targeted at global climate change issues include:
  - Photoconversion processes. The Office of Renewable Energy through the auspices of the International Energy Agency/Renewable Energy Working Party will host an international conference on "Solar Photoconversion Processes for Recycling Carbon from the Atmosphere: An Assessment of Energy, Research, and Industrial Implications".
  - Environmental effects of energy production. The Office performed an analysis examining the environmental effects of all stages of the energy production cycle for 14 electric energy technologies. Carbon dioxide emission profiles for each of the technologies resulted from this analysis.
  - Geothermal Comparison. The DOE geothermal research program recently conducted a comparative study on the emissions from several geothermal power plants and found that these emissions are a small fraction of those emitted from fossil fueled power plants.
  - Ocean Study. Results from recent studies conducted by the Ocean Technologies Division confirmed the prediction that less than 3 percent of the carbon dioxide present in the ocean waters would be released in the ocean thermal energy conversion process.

- **Biofuels Study**. The Biofuels Division has completed fuel cycle carbon balances for two liquid fuels and one electric generation technology.

o **Federal Energy Management Program (FEMP)**. The program has the statutory responsibility for monitoring Federal energy use. The U.S. government is the nation's largest energy user, accounting for about 2.5 percent of the nation's annual energy consumption. The increased efficiency--and accompanying reduction in CO_2 emissions--encouraged through the FEMP office are important as an example to the rest of the nation. A new initiative will demonstrate Federal leadership in improving energy efficiency through utilization of more efficient lighting.

o **State and Local Assistance Programs**. This CE Office administers grants to States to undertake a variety of activities to achieve energy savings and related reductions in CO_2 emissions. DOE can influence State energy activities through grant regulations and technical assistance. The programs include:

- State Energy Conservation Program, which provides funds to states for energy program activities. This program requires the adoption of some mandated activities, including lighting efficiency standards, carpooling programs, energy-efficient procurement programs, and energy codes for new buildings.

- Energy Extension Service, which provides funds for information and education activities.

- Institutional Conservation, which provides matching, cost-shared grants (50 percent Federal and 50 percent participating institutions) for energy saving measures at schools and hospitals.

- Weatherization Assistance Program, which provides grants to provide energy-saving measures to the homes of low-income families

NICHE MARKETS FOR CONSERVATION TECHNOLOGIES

Senator REID. It seems to me that we have a special situation developing in southern California at the present time with the recent rulings by the South Coast Air Quality Control Board.

Just in passing I'd note that I've met with the director of that agency, which has been given significant power by the State legislature.

Regulatory decisions by the board clearly are going to require stricter standards for emissions. Consumers in this region will evidently wind up paying higher prices for energy use in the future.

So, my question to you is do you see special niche market opportunities for demonstration and deployment of new conservation technologies in southern California and, if so, what is your organization doing to take advantage of these opportunities to establish in effect a large-scale energy efficiency testing laboratory?

Mr. DAVIS. Well, in that particular area we are working jointly with the South Coast Air Quality Management District. We have some activities underway, jointly funded, to look at alternative engines for buses, fuel cells. And we also have underway activities in electric vehicles that could easily be directed to some of these niche markets that are being created by legislative initiative.

It's true also in areas like Denver where alternative fuels or fuels with a higher oxygen content also would be required locally and have a very positive effect on local conditions.

Senator REID. But don't you think California, because of its huge market, demands that the Federal Government be involved in some of the opportunities that are available there?

Mr. DAVIS. Absolutely it does.

Senator REID. I mean there's a significant difference between—take a part of Colorado, any part. Take the whole State of Colorado and compare it to that huge metropolitan area in southern California; it demands attention.

Mr. DAVIS. There's no question about that.

Senator REID. It just creates markets that other places, such as in Colorado and Nevada, we can start burning alternate fuels and nobody cares because it's such a small market. In California, it demands that businesses look at that because the market is so great. Isn't that right?

Mr. DAVIS. There's no question about that. And that again points to the need for not only devising new systems and more efficient engines and automobiles, whether they be fuel cells or electric vehicles or better engines to consume reformulated gasoline; it also points to the strong need for both performance and emissions data as we proceed with those programs so we really know where we're at, where the technology can take us, where the market actually is shaking out.

Senator REID. I have two comments. One is that—and I appreciate your saying we need more studies. But I think that all over the country we've about had it with studies. You know, we've studied acid rain until the libraries won't hold any more books.

In southern Nevada recently I just held a transportation summit because we're developing air traffic problems for the first time. As an example of what's happening around the country, there are 11 different committees in effect studying the same thing, governmental committees.

So that's my first comment on your observation.

And second, I would hope that your agency would assign someone or a group of people to spend a great deal of time on what's going on in southern California and work with them, because I think that it creates opportunities for the rest of the country that exist nowhere else.

I hope the South Coast Air Quality Control Board succeeds. They've got a tremendous burden, as you know, with the smog that exists there and the growth that's still developing.

I would hope that next year when we get back together we're doing less studying and a lot more practical development of alternate technologies.

Mr. DAVIS. And, sir, I agree with that.

I'd only add one footnote: I wasn't trying to imply more studies. When I talk about data, it's important that we understand how to collect data so that it's reproducible, so that it's acceptable to manufacturers as well as individuals and consumers, so that the data has merit; so that the data can lead to the proper investments in research, proper investments in demonstration, the proper investments in regulation. And right now we really have a lot of information that's very difficult for anybody to use in a totally meaningful way.

Now that doesn't preclude proceeding on parallel paths. And we will do that and certainly plan to work with both South Coast Air Quality and also the California Energy Commission. And we have a lot to learn from those programs.

NICHE MARKETS

Senator **Reid**. Would you describe explicitly what program enhancement or shifts, are contained in your fiscal year 1991 budget request in response to these niche market opportunities.

Mr. **Davis**. Niche market opportunities, for deployment of new conservation technologies in particular geographical areas, have been created by special legislation for areas such as Los Angeles and Denver. These areas create environments that are particularly attractive to new energy efficient and renewable technologies.

In the buildings area, we have requested an increase in the technology assessment and transfer subprogram from $2,275,000 in 1990 to $8,050,000 in 1991. A major portion of this increase will be to take advantage of these niche market opportunities. The increase includes a new project entitled "Acceleration of Near-Term Conservation," to be funded at $1,500,000, which would include the funding of collaborative efforts with industry to introduce new and emerging building technologies into these niche markets.

The fiscal year 1991 Transportation budget request includes $1 million for field test and evaluation of electric vehicles. These funds are to be used to support the field testing of new electric vehicles in niche markets through cost-shared programs with private utilities and State and local governments. Priority will be given to those areas currently experiencing problems with air pollution from vehicle emissions.

In the area of industrial energy conservation a niche market exists in California for equipment that will capture volatile organic compounds [VOC] before they are incinerated or emitted to the atmosphere. The captured organics are then recycled. This equipment, which is called a Brayton solvent recovery unit, also captures certain chlorofluorocarbons. In response to this opportunity, a joint project, with Southern California Edison and the Electric Power Research Institute, was started to make and test a small mobile unit. This mobile unit will be moved from factory to factory in southern California to make test runs on capturing VOC's in a number of plants. These tests will obtain design data for subsequent full-scale units. Funding for this activity is included in the budget request. We do not consider this a program enhancement or shift, since R&D on Brayton solvent recovery has been supported for the past few years.

BUILDINGS AND COMMUNITY SYSTEMS

Senator **Reid**. I think one of the most complex of your research areas is the buildings and community systems program. Your budget request of some $46 million for this program is distributed among three major components: research and development, technology transfer, and congressionally mandated programs. The areas are further divided. For example, research has 11 subprogram areas. Furthermore, each of these subprograms contains numerous, distinct programs.

In a program such as the space shuttle, all these various projects would be separate building blocks leading toward one common end, which would be an operational spacecraft. Your research projects, on the other hand, generally have little binding them together except the rubric energy conservation research. Yours, generally speaking, are a collection of individual projects, most of which make their own separate and independent contribution to energy savings.

So with that brief background, my questions are: With all these varied and distinct projects how do you prioritize; how do you decide how strongly to push a particular concept; and how do you judge relative research success among the various projects?

I'm asking this because you're new to the post and the subcommittee would like to know about your style of management and about your personal approach to establishing research priorities.

Mr. DAVIS. Sir, what we've tried to do in each of the end use sectors, and in particular buildings, is to create a way of seeing all these projects in a better context. And the context is by end use and by timeframe: near term, mid term, and long term. And the various elements of the buildings program might be viewed in terms of the building shell, might be viewed in terms of the environment inside the building, might be viewed in terms of the regulation and activities associated with the building community at large, and then could be viewed in the necessary information activities that would share that information and successes.

If we look at the building envelope, we pretty well know how much energy is lost through the envelope and how much energy is gained through the envelope. And I think that's the right way to visualize how important windows are, how important walls are, how important foundations are, how important roofs are as to what is the overall contribution to the envelope.

I think we need to take a closer look at indoor air quality and the issues that are important there.

With respect to standards and guidelines or codes, we have building standards that apply to the overall construction of those facilities; we have worked in that area. As you know, the standards we've put forth are voluntary for the private sector, but I think we can work more diligently to encourage the acceptance of those—at the State and local level, which is the proper authority.

We also are beginning a more aggressive effort with appliances, because certainly the appliances that are being used in a building are a substantial amount of the energy consumption.

So we're trying to approach it by timeframe and what are the benefits of near-term activities, what are the benefits of mid term, what are the benefits of long term. And by more of a rollup in terms of program element: the building envelope, the appliances that are inside, the regulatory arena, codes, standards, et cetera. And then the information necessary to move that whole process forward.

INDOOR AIR QUALITY

Senator **Reid**. Indoor air quality research is an area which you have been studying for years and which you propose to increase by 16 percent next year. But unlike most of your activities, this research appears unlikely to return direct cash benefits to the end user. While indoor air quality is an important issue, its benefits are calculated in terms of reduced health risk, a factor which may be difficult for the consumer to fully appreciate.

Given this situation, what are you and the EPA doing to ensure that the benefits of your research are used by the private sector?

Mr. **Davis**. I think the indoor air quality area is an area that we have to look at really more carefully. I think our program can be improved by a further understanding of differences, both in the residential sector, where radon and associated activities might be of primary concern, and then in the commercial sector, where the whole issue of sick buildings is lurking around.

I have not done the amount of investigation that I personally need to do with the EPA to sit down and to bring together a joint proposal on this topic and it's an area where we need to do further work. I would like to provide additional information for the record.

[The information follows:]

Indoor Air Quality

Reducing the health risk of energy conserving buildings is an important goal of the Department's building energy research program. DOE is studying the emission behavior of new insulation materials, ventilation effectiveness within buildings, mathematical modeling of contaminant transport within buildings, and the development of measurement techniques and protocols to allow for the assessment and solution of indoor air quality (IAQ) problems. The requested funding will allow for some expansion in these areas as well as provide for studies of the energy impacts of infiltration and ventilation. These latter topics, which represent the direct link between IAQ and energy conservation, have the potential to result in direct financial benefits to the end user. For instance, an advanced ventilation design which emphasizes contaminant removal rather than contaminant dilution, can potentially reduce the need for outside air by 50 percent and thereby reduce the associated energy liability.

Primarily through joint participation on the Interagency Committee on Indoor Air Quality, DOE and EPA work together in ensuring that the benefits of DOE research are used by the private sector. Noteworthy examples include the recent EPA initiative to develop IAQ guidance documents for building owners, building operators, school administrators, and home builders. EPA has solicited DOE's help in developing these documents. Appropriate research reports have been forwarded to EPA, and DOE personnel and laboratory representatives will participate in the upcoming review processes. As another example, DOE provided the ventilation assessment expertise in the multi-agency research effort to study the IAQ problems of the Library of Congress Madison building. The results of this effort will significantly increase the knowledge base available to the private sector for use in diagnosing IAQ problems.

INDOOR AIR QUALITY FUNDING

Senator **Reid**. The health costs associated with indoor air pollution are staggering. With such large numbers on the other side of the equation, there is often an instinctive reaction to believe that the Federal Government should do more research to mitigate the problem.

Tell the subcommittee how the requested funding level of $1.6 million was derived?

Mr. **Davis**. It's basically consistent with the prior year funding. It's not a great deal different than the fiscal year 1990 appropriation.

Again, we're looking at various ways we can mitigate radon in the residential sector. That's the primary focus of what we're doing in the residential sector.

Senator **Reid**. What kind of request levels do you anticipate over the next 2 or 3 years?

Mr. **Davis**. My anticipation is that the activity would increase. However, before I would make such a recommendation, as you pointed out, we need to work more closely with the EPA to come up with a program that is balanced both on the residential and the commercial needs.

Senator **Reid**. Do you see the time in the foreseeable future where research on indoor air quality is done largely voluntarily?

Mr. **Davis**. I wouldn't think that would be the case, and the reason again is that the work will need to be done by an entity that would have credibility with the private sector and it has to be done in such a way that the people receiving the results—which are important health issues—receive those results in such a way that they can accept them as credible information.

Right now I think there's a lot of misinformation in the system as to what the problems are and what they're not, and I think that probably is adding to the problem as opposed to helping us define a good Federal approach to these activities.

METALS INITIATIVES

Senator **Reid**. Let's talk a little bit now about the metals initiative. It's my understanding that you have three ongoing projects under the metals initiative.

I'd like you to provide a brief description of each of the current projects under the metals initiative, such as superplastic steel, spray casting, and direct steelmaking. I'd like a brief description of each process, an explanation of its significance, the total estimated project cost, funding needed next year and each of the out-years to complete the projects. And, I hope you'll include the purpose of the research.

Mr. **Davis**. Yes, sir.

The total funds appropriated to date are roughly $30 million. The total funds expended are approximately $26 million, which leaves just less than $4 million of funds in this fiscal year, fiscal year 1990, that can be applied to new projects.

There have been four major projects so far. There was an initial project in electromagnetic casting research that has been terminated. There are ongoing projects in superplastic steels, in near-net shape spray casting, which really looks at trying to produce sheet steel, and probably the largest effort and certainly the one that requires the most funding or has required the most funding to date, is direct steelmaking. The idea of direct steelmaking is being able to make steel directly with coal as part of the fuel rather than through a coking process.

In terms of the run-out of funding, we have requested $8.6 million in additional funds in fiscal year 1991. We would expect those to be applied to continuation of spray casting and the continuation of the direct steelmaking, about $1.2 million to spray casting and about $6 million to direct steelmaking.

That leaves an additional balance of $1.4 million. That $1.4 million could be used either to continue the projects we would start this year—the new opportunities we would start this year with the roughly $4 million that we have to apply—or it could be applied to phase II of the spray casting work, or it could be applied to a further continuation of superplastic steel.

Now the total run-outs that we see in the program today before any new initiatives, before any new projects are started, would require about $6 million in fiscal year 1992, $6 million in fiscal year 1993, and $4.4 million in fiscal year 1994, for a total of just under $17 million, with what is currently being supported.

And that's roughly $16 million to bring the spray casting to conclusion and less than $1 million in fiscal year 1992 to bring direct steelmaking to a conclusion, as we currently see the activities. I would like to provide additional information for the record.

[The information follows:]

STEEL AND ALUMINUM INITIATIVE

Superplastic steel processing.—This project is being managed by the Lawrence Livermore National Laboratory. Three industrial companies are cost-sharing in the project. The objective is to develop a steel composition and a steel processing sequence to produce superplastic steel on a production scale, using the ultra-high carbon steel concept developed by Professor Oleg Sherby at Stanford University. Superplastic behavior is a phenomenon that is exhibited by metals under certain, specific conditions of temperature and metal structure; under these conditions, the metal can be significantly deformed without fracturing during hot working.

In Phase I of this program, which is complete, three main objectives have been pursued: (1) to establish the composition and processing steps necessary for commercial-scale production, (2) to produce and process these steels under industrial-production conditions, and (3) to demonstrate the die-filling capability of the ultra-high carbon steel by superplastically forming a complex near-net-shape part. The success obtained in Phase I has provided the basis for continuation of the project to Phase II. In Phase II, the superplastic steel composition will be further developed to improve deformation characteristics.

The ability of the steel to exhibit superplastic behavior may be exploited in the fabrication of steel components, particularly components having complex shapes. Successful development and application of this technology to the fabrication of steel components will reduce costs and save energy, primarily through an improvement in process yield.

The total DOE project cost in accordance with the plan proposed is $3,706,000. DOE funds required in fiscal year 1991 will be $1,500,000, assuming a decision that Federal funding of Phase IIB is required and justified. No out-year funds are required.

Spray casting.—This research effort is being conducted by the Idaho National Engineering Laboratory (INEL), Oak Ridge National Laboratory (ORNL), and Massachusetts Institute of Technology (MIT). Eight companies are cost-sharing in this project.

The overall objective of the INEL project is to develop a near-net-shape spray casting process for the continuous production of cold-rolled, low-carbon steel sheet. If successful, significant energy and operating cost savings would result from eliminating process steps. The current production flowsheet for steel sheet is both energy and capital intensive, requiring large investments in slab casting machines, reheat furnaces and hot strip rolling mills. Because the spray forming process produces a near-net-shape product, the capital intensive, slab reheat furnaces and hot strip rolling mills will not be required for most products. Energy savings are estimated to be about 0.2 quadrillion btu's annually.

Spray casting is a process in which liquid steel is converted into a spray of droplets. The droplets are partially cooled in flight and then compacted against a substrate to form a near-net-shape solid, such as thin sheet.

Phase I of the spray casting program is scheduled for completion in March 1991. A major objective of Phase I is the bench-scale development and comparative evaluation of three different spray nozzle systems. These systems are being developed concurrently at the INEL, MIT, and the ORNL. The results of Phase I will provide a basis for moving to Phase II, a pilot-scale facility.

Total DOE project cost, in accordance with the plan proposed, is $22,116,000. DOE funds required in fiscal year 1991, to complete Phase I, are $1,200,000; in addition $6 million would be required in fiscal year 1991 to fully fund the first 12 months of Phase II without incurring a delay. Out-year DOE funds, assuming full funding for the first 12 months of Phase II during fiscal year 1991, are $6 million in fiscal year 1992 and $4,400,000 in fiscal year 1993.

Direct steelmaking is being managed and cost-shared by the American Iron and Steel Institute. The objective is to develop a coal-based, continuous steelmaking process that requires less energy and lower capital investment than the current process.

The direct steelmaking project involves construction and operation of a pilot plant, full-scale plant tests, and the development of continuous refining. Laboratory-scale research on the chemical reactions among the fuel, the slag, and the metal bath are being conducted at the Massachusetts Institute of Technology and Carnegie-Mellon University.

The key to the success of this coal-based process is the efficient use of the energy generated by the coal. The carbon in the coal is used as reductant for the iron ore and as a source of thermal energy. The extent to which the heat from the combustion of carbon can be transferred to the molten metal bath, and the attainment of a high metal production rate, are critical variables.

The current ore-based steel production process is energy and capital intensive, requiring ore agglomeration, coke ovens, blast furnaces and basic oxygen steelmaking furnaces. It is also a batch type process. The successful development of the direct steelmaking process will lead to replacement of the blast furnace, coke ovens and basic oxygen steelmaking furnaces with a single step, continuous, direct steelmaking process that uses coal instead of coke as the reductant and heat source. Benefits will include considerable capital and operating cost savings. Energy requirements are predicted to be 20 percent less than in the conventional process.

Total DOE project cost, in accordance with the plan proposed, is $23,689,000. DOE funds required in fiscal year 1991 are $6 million. Out-year DOE funds required are $435,000 in fiscal year 1992.

OUTLOOK FOR METALS INITIATIVE

Senator REID. What is the hope for the future on these three projects?

Mr. DAVIS. I think the hope from a direct steelmaking point of view would be to eliminate the coking process, to be able to produce steel with less energy and substantially less environmental impact.

The near-net shape casting or the spray casting also would provide a major energy efficiency benefit, in that sheet could be produced while eliminating the rolling and reheating process associated with bringing it to a final shape. It reduces processing and, therefore, reduces energy.

On superplastic steels, the same approach really is there. If you can create a steel with characteristics, so that the shaping and forming of that steel can be done with substantially less energy, you're getting the same steel; but you're getting the same steel with less energy invested in its production. All of these processes are aimed at improving productivity, getting more steel for less energy invested, and again the associated environmental benefit.

Senator REID. Is there research going on other places on these three processes?

Mr. DAVIS. There certainly appears to be some research in Japan, as an example, on direct steelmaking. I think we have some view of what their time plans are to build new small, but innovative steelmaking projects. I'd like to provide further detail on that for the record.

Senator REID. Do you think we're ahead at this stage?

Mr. DAVIS. I don't know.

Senator REID. Would you let the subcommittee know?

Mr. DAVIS. Yes, sir.

[The information follows:]

STEEL RESEARCH BEING PERFORMED BY OTHER COUNTRIES

Superplastic steel research is being conducted in Japan. The objective is to develop superplastic, corrosion resistant, stainless steels, whereas the objective of our Metals Initiative project is to develop an ultra-high carbon, superplastic steel. Thus, the two programs have different objectives and different end-use applications.

Spray casting research is being conducted in Great Britain by Osprey, Ltd. The purpose is to develop spray nozzles, focusing primarily on the fundamental behavior of high pressure gas atomization. Osprey is not developing a production process for steel sheet. However, research is being conducted in West Germany to develop process technology for the production of steel sheet using a nozzle licensed from Osprey.

Smelting research is being performed primarily in Japan and Australia. However, the goal of these research activities is somewhat different than that of our direct steelmaking project. In its project, the American Iron and Steel Institute is developing a process that is tailored to domestic raw materials, will have the flexibility to use a significant amount of scrap as an input material, and will produce steel in a one-step process. The research programs in Australia and Japan aim to produce a pig iron containing about 4 percent carbon; the carbon will be removed in a subsequent refining operation. Also, the Japanese and Australian programs do not emphasize scrap melting.

In Japan, the development work on superplastic stainless steel appears to be complete, and attempts are being made to identify commercial applications. To date, DOE is unaware of any commercial applications for superplastic stainless steel.

There have been no reports of Japanese research in the area of spray casting of steel. The research efforts in Great Britain have been underway for several years, and have resulted in the development of spray casting nozzles which have been patented and licensed. The research in West Germany, using the Osprey nozzle, has been underway for about two years. Although the Osprey nozzle has been used to produce tubes and forging preforms, adaptation of this nozzle to the production of steel sheet has not been successful. The material produced, which must undergo some hot-rolling, has lacked the requisite quality. Efforts are continuing, but probably at a lower level than previously.

In Japan, a smelting reduction program has been underway since 1988, using fine ore as the source of iron units; conversely, the American Iron and Steel Institute's direct steelmaking program uses agglomerated ore—pellets—which simplifies technology development. Currently the Japanese are designing a 500 ton per day pilot plant; construction of this plant is scheduled for completion in 1993. The associated research program is targeted for completion in 1994. A feasibility study for a commercial size facility will be carried out in 1995. The American Iron and Steel Institute's pilot plant program, 120 tons per day, is scheduled for completion in 1992; the next step in process development will depend on the results obtained in the pilot plant program. In Australia, a program is being conducted by CRA, Ltd. As part of this effort, small scale tests have been conducted in West Germany in conjunction with Klockner. Construction of a pilot plant facility, although planned, has not been announced.

FUNDING TO CONTINUE PROJECTS

Senator REID. How much of the fiscal year 1991 request of $8.6 million will be required to continue the three ongoing projects you've talked about?

Mr. DAVIS. We're planning about $7.2 million that will be needed during fiscal year 1991.

Senator REID. What is that figure again?

Mr. DAVIS. It's $7.2 million. It's $1.2 million for the spray casting. It's $6 million for the direct steelmaking, which leaves a balance planned available of $1.4 million.

Senator REID. What is the total fiscal year 1991 need for other known projects that will be competing for these uncommitted funds?

Mr. DAVIS. That's undetermined at this point in time. We do not know exactly what projects we're going to start with the $3.8 million that remain in fiscal year 1990 funds. So between the $3.8 million in fiscal year 1990 and the $1.4 million we could add to that in fiscal year 1991, would comprise the total basket of funds that we're aware of right now for new activity. Three proposals—cyanide formation in alumina reduction cells, inert cathode development for alumina reduction cells, and near net shape casting of steel strip—are currently being evaluated. If all three of these projects were to be initiated with fiscal year 1990 funds, the DOE funds required in fiscal year 1991 for continuation of these proposals, in accordance with the plans proposed, would be approximately $2,600,000.

Senator REID. Are there likely to be other projects that will apply for cooperative research funds in fiscal year 1991?

Mr. DAVIS. Yes; we are aware of several proposals that are being prepared for funding under the Metals Initiative Program. For example, we anticipate receiving proposals in the areas of intelligent processing for primary metals, near-net-shape casting of steel, aluminum matrix composites and iron aluminide development.

TRANSPORTATION

Senator REID. Turning now to the transportation program, this is the area where our greatest vulnerability to foreign oil exists, I believe. Do you agree?

Mr. DAVIS. Yes, sir; I do.

Senator REID. Our transportation sector depends on petroleum for 91 percent of its energy needs, so it's almost entirely oil dependent. The majority, some 63 percent, of the petroleum consumed by the United States is used by this sector.

I note on page 346 of your budget justification that within 20 years 11 quads, or approximately one-half of our present transportation energy use, could be shifted from petroleum through a combination of efficiency improvements and fuel substitutions.

Last year, the Department predicted that as much as 14.1 quads could be reduced over the next 20 years. What accounts for the reduction in potential savings from 14.1 to 11?

Mr. DAVIS. Sir, I think the main activity we're looking at there is offsets, various ways to provide alternative fuels into the transportation fuel mix as direct offset against imported petroleum.

Senator REID. From the information provided to the subcommittee last year and now this year it appears that nearly all the potential decrease is attributable to reduced efficiency assumptions. Last year's figure of 14.1 quads total petroleum reduction had an efficiency component of 6.5 quads, but this year's 11 quad figure assumes that only 3.85 quads will come from efficiency improvements.

Now you have indicated the basis for this change.

Mr. **Davis**. Sir, I think there's one additional piece of information I need to provide. While efficiency improvements still are making a substantial contribution, we're assuming that the vehicle miles traveled is also increasing at a substantial rate. So we need to fuel a greater transportation energy requirement overall. So the requirement for energy is increasing.

Senator **Reid**. But that was the same last year, wasn't it?

Mr. **Davis**. Sir, as far as I know we're still relying on the same EIA projections to the year 2010.

Senator **Reid**. That's the point. Why the big jump this year if the same basic information was being used last year?

Mr. **Davis**. The only thing I could suggest there is that while we still think there's major efficiency improvements to pursue, and we will, we also think there's more opportunity for alternative fuels. I would like to provide additional information for the record.

[The information follows:]

Transportation Oil Reductions

The estimates of future oil savings and substitutions that appear in the Transportation budget request were based on some assumptions with respect to the successful accomplishment of the technology R&D programs that are presented in the budget; for example, the development of a cost-effective electric vehicle that could serve those businesses and households for which a 150-mile range vehicle is satisfactory. The estimates were also calculated against a reference case projection of oil use by all the transportation modes that was determined by population, gross national product, and energy price projections taken from the Energy Information Administration.

Since these estimates were made, there have been several additional savings and substitution scenarios that have resulted from alternative estimates of technology penetration and alternative reference cases. Therefore, the savings and substitution estimates in the budget and described below are just one of several plausible views of the future.

The estimated year 2010 oil savings and substitutions dropped from 14.1 quads to 11 quads due to reductions in the rate at which efficiency improvements and alternative fuels will penetrate the market. The Office of Transportation Systems conducted a delphi study of over 50 experts inside and outside DOE who provided their estimates of the penetration of new technology. These results were used to alter the penetration of technology and fuels that would reduce transportation oil use. There was also some reduction in heavy truck oil savings due to a lower projection of heavy truck fuel use in 2010. More automobile fuel efficiency was assumed to take place in the reference case. For example, the use of oil by automobiles in 2010 in the reference case was projected to be 9.5 quads last year, but this estimate dropped to 8.9 quads this year due to assumptions about higher auto miles per gallon being achieved without the assistance of DOE programs.

These reductions were influenced by changes in the Energy Information Administration's (EIA) reference cases. The most recent EIA reference case (early 1990) will change these reference oil projections by transportation mode once again. It can therefore be expected that oil savings and substitution estimates will vary from year to year as reference cases change and as the efficiency potential and penetration potential of the efficiency technologies change.

IMPACT OF PRICE ASSUMPTIONS

Senator **Reid**. Maybe this question will help: Does the wide disparity reflect hidden assumptions about price-induced energy conservation or consumption?

Mr. **Davis**. Sir, I'm not aware that it does.

Senator **Reid**. Would you look at that closely?

Mr. Davis. Yes, sir; I would like to provide additional information for the record.

[The information follows:]

Price Induced Impacts

The drop in estimated oil savings and substitutions between the two budget documents is not really related to any change in the prices of fuels. The Office of Transportation Systems' estimates are not directly tied to any particular fuel price scenario. Rather the estimates are based on projected reference case oil use by mode, the reference case fuel efficiency changes by mode, the penetration of efficiency improvements by mode, and the substitution of oil by mode. All four of these items can change from year to year. If we had a sophisticated model that included these four elements and fuel prices, we might have some price induced impacts. But we do not have such a model. In fact we do not know how sensitive new vehicle fuel economy will be to changes in the price of fuel in the future. One recent study (by David Greene of Oak Ridge National Laboratory) showed that during the 1979 to 1989 period, fuel prices were less important than the fuel economy standards in affecting new car fuel economy changes.

ALTERNATIVE FUELS

Senator Reid. On the other side of the coin, approximately two-thirds, or nearly eight quads, of your total estimated petroleum saving potential would be achieved through fuel substitutions, isn't that true?

Mr. Davis. Yes, sir; I would like to provide additional information for the record.

[The information follows:]

Fuel Substitutions

The actual fuel substitutions estimated in the Transportation budget request was 7.4 quads in the year 2010. Of this total, 1.6 quads was in the form of electricity. The successful completion of the DOE electric vehicle program would result in a cost-effective light duty vehicle with a range of 150 miles. It was estimated that such a vehicle could account for 10 percent of all cars on the road in 2010 and for 14 percent of all light trucks.

The remaining 5.8 quads of oil substitution would be accomplished by having 30 percent of all cars, light trucks, and heavy trucks use an alternative liquid or gaseous fuel. This 30 percent penetration was based upon the successful development of flexible and dedicated alternatively fueled vehicles and the cost-effective supply of an alternative fuel and infrastructure.

ALTERNATIVE FUELS PLANS

Senator Reid. That's a heavy emphasis on alternative fuels.

Do you have a detailed plan which targets specific substitute fuels and which identifies the technologies that would be necessary to permit their widespread use by the year 2010?

Mr. Davis. Sir, we're developing that plan now in terms of alternative fuels. There are opportunities certainly with natural gas, there are opportunities with methanol and there are opportunities with ethanol. We have focused more effort in the renewables program on the development of ethanol, but that's not to the exclusion of any other opportunity.

Senator Reid. Do you have an idea of when that plan might be ready?

Mr. Davis. We would hope to have, at least from an ethanol point of view, a substantially improved plan by the middle of the summer. We're currently working on that with the Department of Agriculture.

In terms of the overall plan for alternative fuels, in response to the Alternative Motor Fuels Act, we now have the advisory structure in place to move more aggressively on that whole program in dealing with alternative fuels. I think that will allow the Department to bring forward a better plan. I would like to provide additional information in the record.

[The information follows:]

ALTERNATIVE FUELS PLAN

The Department's effort in response to the Alternative Motor Fuels Act for alternative-fueled vehicle implementation is in two primary areas. One area involves the acquisition of alternatively fueled units, the second and equally important area is the collection, analysis, and presentation of data.

The acquisition effort is expected to add about 100 to 200 alternatively fueled automobiles per year to the federal fleet and 5 to 10 heavy duty trucks. Programs involving about 200 alternatively fueled buses funded by the Urban Mass Transportation Administration are currently in place. All of the units demonstrated by DOE will consist of high technology systems. The data generated will be analyzed and made available to all interested parties on an electronically accessible database. Presentation of the data will emphasize the specific engine technology used for each fuel and vehicle. This presentation will encourage comparisons, for legislative and development purposes, of fuel/engine technology systems where a unique technology can be adapted for a specific fuel, rather than simple comparisons of alternative fuels in common or non-optimum technologies.

It is expected that the data collection, analysis, and presentation system used by the Department will encourage the industry to participate in the DOE programs by using the most advanced technology systems available in order to gain a marketing advantage.

TRANSPORTATION

Senator **Reid**. What specific incremental quantities of methanol, natural gas, electricity, and other substitute energy sources are assumed in an 8-quad substitution scenario?

Mr. **Davis**. The actual estimate of oil substitutions for 2010 in the fiscal year 1991 budget request was 7.4 quads. It was assumed that 10 percent of the automobiles and 14 percent of the light trucks would be operating on electricity, thus having electricity substitute for 1.6 quads. The remaining 5.8 quads would be accounted for by 30 percent of the cars, light trucks, and heavy trucks operating on methanol, natural gas, or some other alternative fuel. The budget request did not specify the mix of these alternative fuels, but a delphi study completed by the Office of Transportation Systems in August 1989 gave results that projected methanol use to be 10 times greater than compressed natural gas in 2010. Using this mix, the 5.8 quads of oil would be substituted by 5.3 quads of methanol and 0.5 quads of natural gas. The delphi study only dealt with methanol and CNG. There was no opportunity for the respondents to choose other possible fuels such as ethanol, liquefied petroleum gas, et cetera. Also, the source of the alternative fuel was not explicitly dealt with. For example, the respondents did not specify whether the methanol came from abroad or was domestically produced from biomass, natural gas, and/or coal.

NATURAL GAS

Senator **Reid**. If compressed natural gas, or methanol from natural gas, are expected to play a role as petroleum substitutes in the transportation sector early in the next century, would you outline in more detail your assumptions about natural gas production volumes, competing demand for natural gas from other sectors, including utility demand, after the President's proposed year 2000 deadline for clean air, and also your assumptions regarding market prices?

Mr. **Davis**. Sir, I'd like to do that for the record. That's a very complicated and important question and I'd like to provide that response in writing.

Senator **Reid**. That's fine. And I'm satisfied that you do recognize it is a complicated but very important question for the committee.

Mr. **Davis**. Yes, sir.

[The information follows:]

Natural Gas Impacts

The alternative fuels, other than electricity, that substitute for oil in the transportation sector in 2010 as presented in the budget request were not specified by type. If the Office of Transportation Systems' delphi assumptions about the compressed natural gas contribution of only 0.5 quads is accepted, then 5.3 quads of liquid alternative fuels would be required. The most likely fuel would be methanol, and this could be made from biomass, coal, and/or natural gas. It could be produced domestically or imported. The Alternative Fuels Project being conducted by the Office of Energy Demand Policy in DOE will develop a likely scenario of how the methanol will be produced and the cost to motorists to use it. Similar cost information will be developed for compressed natural gas vehicles. Our estimates did not explicitly assume any prices for the alternative fuels.

CERAMIC ENGINES

Senator **Reid**. Let's talk a little bit now about ceramic engines. To what extent would the total elimination of the advanced gas turbine program affect the Nation's ability and likelihood to achieve that mid-term petroleum reduction goal of 11 quads?

Mr. **Davis**. Certainly we're not suggesting, nor would we suggest, a total elimination of such a program. What we have suggested is that we currently have two efforts underway, we have two contractors involved in the program. We've spent $230 million on the program to date.

Our objective in the program was proof of concept. I believe that we can accomplish that with a single contractor.

Further, I believe that there is an opportunity if we compete the two contractors or we put them in a competition against themselves, that we might be able to get the same level of program if the contractors are willing to increase their cost sharing.

So we certainly are not going to preclude moving forward with both contractors, but we are going to try and increase the cost sharing, and we are going to have a fly-off, if you will, between the two competitors in that process.

Senator **Reid**. But let's assume total elimination. Then what?

Mr. **Davis**. I think the gas turbine, from a stationary point of view and also from a mobile point of view, can't be eliminated. It's an option that has to be developed.

Senator **Reid**. But let's say it is eliminated. Let's say there's no money provided for the program.

Mr. **Davis**. I really don't know what the impact would be then in terms of overall reduction or overall increase in the transportation fuels that are needed.

Senator **Reid**. What you're saying though is it would be very detrimental to eliminate the program, especially to the Nation's ability to switch to substitute fuels?

Mr. **Davis**. Yes, sir; I believe it would.

Senator **Reid**. The problem we have with these programs is when they come before Congress it's always next year, it's always next year the program is going to work. And there are a lot of cynics being developed. I won't mention names, but each of these programs have certain proponents in Congress and they always beg for one more year and then that one more year comes and they need another year. So there is the possibility that this and other programs could just be eliminated.

Mr. **Davis**. Yes, sir.

ADVANCED GAS TURBINE ENGINES

Senator **Reid**. At the fiscal year 1990 funding level of $11.9 million, or so, how many more years would be required to complete the present AGT program?

Mr. **Davis**. At a funding level of approximately $11.9 million per year, 2 more years of funding would be required beyond fiscal year 1990 to complete the present AGT program.

Senator **Reid**. It is my understanding that General Motors is truly interested in developing an engine for automotive use, based on the advances that the Allison Division has achieved in this program. Is that your understanding?

Mr. **Davis**. It is our understanding that General Motors is interested in commercialization of the automotive gas turbine technology. It is possible that if sufficient progress is demonstrated under the present program in ceramic components development, a production gas turbine vehicle could be marketed as early as the 1995 model year.

Senator **Reid**. I am also told that Garrett is developing a different, single shaft, engine design which, if successful, they may well use in their auxiliary power unit production line. Would you indicate briefly now, and elaborate for the record, what some of the spin-off benefits from this ceramic engine program are?

Mr. **Davis**. I will provide that information for the record.

[The information follows:]

Spin-off Benefits of the Garrett Ceramic Engine

The Allied-Signal Aerospace Corporation, parent of the Garrett Auxiliary Power Division, has identified many products which utilize spin-off benefits from the ceramic engine program. Projects being pursued include a 50 kilowatt cogeneration system, fuel control valves, air turbine starter wheels, airpump rotors/compressors, auxiliary power units, and superconducting motors. The Automotive Sector of Allied Signal is currently in production of ceramic rotors for automotive turbochargers. Bendix Controls of Allied-Signal will soon introduce a new fuel control for an advanced turbine engine with a ceramic fuel regulator. Allied-Signal market projections for aerospace gas turbines with ceramic components indicate a dramatically accelerating future as the ceramic technology being developed matures.

ELIMINATION OF ONE ENGINE CONTRACTOR

Senator REID. And you have said that it would be detrimental to lose the advanced gas turbine engine program?

Mr. DAVIS. Yes, sir; it would be.

Senator REID. Given the facts that you have indicated that this program, AGT program, is very important to your mid-range plans to introduce substitute fuels into the transportation sector; that the two engines in the program are different designs and are intended for different markets—and that's true, isn't it?

Mr. STREB. They're intended for the same market.

Senator REID. Would you identify——

Mr. DAVIS. Sir, they are intended for the same market.

Senator REID. Are you sure that's right?

Mr. DAVIS. It's my information that they're intended for the same market. Our current transportation advance turbine work appears to me to be intended for the same market.

Senator REID. There are some that would differ with that, but if you would look at that more closely, maybe you're right.

That both designs are energy efficient; would there be an agreement there?

Mr. DAVIS. Yes, sir.

Senator REID. And that, the program continues to produce important spinoffs; would you agree with that?

Mr. DAVIS. In terms of the application of ceramics to engine parts and the ability to operate at higher temperatures, certainly that's true.

Senator REID. The Government has spent $231 million on this program over the last 13 years; and that the remaining Federal funding requirement is probably less than $25 million, what is the administration's rationale for again requesting only enough money to support one turbine engine development team?

Mr. DAVIS. Sir, I think our projections of the run-out were $32 million to complete the program.

Senator REID. Rather than the $25 million?

Mr. DAVIS. Roughly. I think $32 million is the figure. I'll check that information and respond back if that's incorrect.

[CLERK'S NOTE.—The Department confirmed for the record that the remaining Federal cost for two engine teams is $24 million.]

Senator REID. But aren't we putting ourselves in a difficult position by having the so-called fly-off that you indicated where we only wind up with one?

Mr. DAVIS. That's a very legitimate question, but I would point to a number of areas: as an example, high-temperature superconductivity, which appears to be very advanced work. But we have a 49, 51 percent cost share directly with industry. I think the same is true in a number of other areas.

As the Department of Energy comes forward and is willing to be much more of a participant and have the same basic objectives as the Congress has in these areas, I think there is indeed the opportunity to get more work possibly and also to be more careful with the funding.

We're not suggesting that there's a problem with these technologies, we're looking at options to get the same or enhanced programs with the same or less funding.

Senator REID. There are some of us though that feel the American automobile manufacturers, for example, should be players in this program.

Mr. DAVIS. Yes, sir.

Senator REID. They're not, are they?

Mr. DAVIS. I believe that we can increase the level of cost sharing. And I think indirectly the American automobile manufacturers—certainly GM, who has a relationship to one of the turbine teams—is involved in this technology.

Senator REID. The ceramic—I would just add a cautionary note. I think that we should be very careful winding up with only one, because then we're really in a difficult position. Because I think this program deserves attention, but I think the administration and the Congress would be placed in a difficult situation if we wound up with only one who was developing this. I really do. I think that we should do what we can to protect this joint effort.

Mr. DAVIS. Yes, sir.

Senator REID. Down the road I think it creates much more efficiency and, as the administration says in other areas, competition is good. Otherwise we're going to wind up with one calling all the shots.

The ceramic turbine engine is the only automotive engine concept that you are developing; and I think additionally that this is a market where Americans are spending money, in excess of $100 billion a year for petroleum-based fuel.

So I think, again stressing for the second time, that it makes sense to spend a few more dollars for parallel research to improve our chances of successfully developing a more efficient engine and, when it's once developed, we have more than one company, developer, to look to.

I would hope then it's fair to say, and I hope you agree with me, that a second automotive gas turbine development team is one of your highest unfunded priorities.

Mr. DAVIS. It certainly is an unfunded priority. But I think we need to also look at our overall ceramics program. If you look across the transportation program, the industrial program and the energy utilization program, there's approximately $25 million being spent on ceramics. And there are other ceramic activities for conventional engines that are activities aimed at wear parts within those engines. We believe that we've demonstrated in some areas—that industry has demonstrated the ability to use those parts and now we have to make a considerable effort to get the cost of those parts down and also attractive to the industry. So there's a large ceramics effort underway.

And across the board we would agree that the materials work in transportation, the materials work in industry, the materials work that supports those are fundamentally important to the program and have to be looked at very carefully.

ALTERNATIVE MOTOR FUELS ACT

Senator Reid. The fiscal year 1991 budget request contains $6.5 million to carry out the activities authorized in the Alternative Motor Fuels Act, and another $2 million requested elsewhere in the alternative fuels utilization program apparently supports the purposes of the act.

So would you provide for the record a description of how this $2 million in supporting research would be used and why it's necessary?

Mr. Davis. Yes, sir, I will. In addition to the Alternative Motor Fuels Act of $6.5 million, we're looking at additional work that would support the development of sites and processes to obtain the data that I was talking about earlier—so that we really know both performance and emissions associated with all alternative fuel options, and we know those as accurately and as quickly as is possible to obtain that information. I will provide additional information for the record.

[The information follows:]

Research Supporting the Alternative Motor Fuels Act

The purpose of the Alternative Motor Fuels Act is to encourage the widespread use of alternative fuels and the production of motor vehicles that use those fuels. These objectives are focused on both energy security and environmental impacts. Although the Act supports the conduct of demonstration activities and the collection of data from these activities, it has become clear that additional work is necessary to provide the type of information and data necessary for industry, the consumer, and the government to make the right economic, technical, and institutional decisions required for effective introduction of alternative fuels into the marketplace. For instance, even though the emissions products from on-the-road alternative fuels use are critical ingredients in the overall analysis, test facilities for measurement of the emissions are not available in some cases (thus the West Virginia University and Colorado School of Mines projects). Even worse, the data collected are often fragmented and not correlatable with similar data, and in most cases are not integrated with fuel supply composition. The validity and commonality of both data and data use must be established before effective use can be made for any application-atmospheric modeling, performance, economic analysis, technology-development requirements, etc.

Several projects included in the Alcohols/Gaseous Fuels Activity budget request support the Alternative Motor Fuels Act in the areas described above. These projects are listed below with estimated funding requirements.

Design, establishment, and operation of a national alternative fuels data center. The center will be responsible for collection and analysis of all available data on alternative fuels utilization (including fuels missions, and performance data); the design and operation of a computerized system for storage, retrieval (including a simple methodology for "outside" users in the scientific, industrial, and government communities to extract data), organization into compatible segments that provide auxiliary information (quality, operational aspects, time, location, etc.), and updating and purging; the establishment and dissemination of a uniform data collection protocol for future tests and demonstrations; and the publication of reliable, accurate reports and summaries. ($600,000)

Quantification of emissions profiles on alternative fueled engines. Engine tests will be conducted on various alternative-fueled engines and the combustion products containing carbon identified in detail. Results of these tests will be used for confirmation studies on decomposition mechanisms and rates of selected species. Species of interest include formaldehyde, higher aldehydes, methane, MTBE, ETBE, and other partial oxidation components. ($500,000)

Model inputs for high altitude emissions. Conduct high altitude compression engine emissions tests with alternative and standard fuels to determine the emissions penalty for high altitude operations. Data generated will be used to enhance the quality of existing models. ($100,000)

Alternative fuels atmospheric models. Integrate global greenhouse gases data from alternative fuels engine utilization and fuels production methods to determine contributions and model inputs. ($300,000)

Federal and Hawaii methanol fleets. The continued operation of the Federal and Hawaii methanol fleets will contribute data and inputs relevant to the data acquired under the Act. ($500,000)

DEMONSTRATION OF ALTERNATIVE FUELS

Senator REID. Much of the $8.5 million related to the act appears to have near-term commercialization implications. Yet petroleum prices continue to remain relatively low.

So why the rush to demonstrate and test these substitute fuels?

Mr. DAVIS. Well, actually, at the level we're talking about, I wouldn't consider it a rush. But I would consider it our view of the investment necessary to begin to produce the data we need to make good decisions.

Senator REID. How important is this research, demonstration and testing under the Alternative Fuels Act to the achievement of your goal of reducing petroleum usage by 11 quads over the next 20 years?

Mr. DAVIS. I think it's essential. I think it's a key part of being able to successfully accomplish that goal.

WEST VIRGINIA UNIVERSITY

Senator REID. Would you elaborate on your current activities with West Virginia University and on your planned high altitude work elsewhere with respect to engine and fuels testing?

Mr. DAVIS. We have two efforts underway where we're beginning to get the detail we need to proceed.

First let me start with Colorado School of Mines. There is an activity underway there where we plan in fiscal year 1991 to provide $500,000 of capital equipment money to bring together a facility.

We would also expect in fiscal year 1991 to compensate them for whatever tests are performed. It could be somewhere between $100,000 and $200,000 as to what actually winds up being done. And it will only be based on what tests are actually performed.

With respect to West Virginia University, there have been a number of ongoing meetings and efforts to bring that into focus. That includes the Environmental Protection Agency as well on the protocol for testing. We believe now that we're ready and that West Virginia is in a position to come forward with their final proposal that makes clear exactly what they propose to do and we can proceed with it.

ELECTRIC AND HYBRID VEHICLES

Senator REID. Let's now look at electric and hybrid vehicles.

General Motors surprised a lot of people last month by announcing that it had developed an electric vehicle called the Impact, which has greatly improved range, and the acceleration and speed of conventionally powered vehicles.

Would you share with the subcommittee your thoughts on the significance of this announcement for the near-term commercialization of electric vehicles?

Mr. DAVIS. Well, it's an important announcement, and I think that one of the key questions we have remaining is what battery or batteries can be combined with existing technology to be reasonably in-hand, in terms of motors and drive and motor controls and so forth.

It appears that the battery—the life of the battery, the cost of the battery, how many cycles the battery can achieve before it has to be replaced—is still the remaining question. And I think that's where we're going to try and focus most of our efforts.

Senator REID. If battery development continues to be a key impediment to the widespread use of commercial vehicles, why does the budget propose to eliminate three of six major candidate batteries and to reduce battery research by $4.3 million or over one-half?

Mr. DAVIS. That is a reduction, but what we're trying to do is focus the work and focus enough money on three areas: sodium sulphur, zinc bromine, and lithium metal, so that we can make quicker progress. It's an effort to focus our activities on those three primary battery couplings. And we believe if we do that, then we'll be much clearer about what progress we have made and what progress remains to be made.

Senator REID. This is an area where the three programs you've indicated will be stressed; there's no additional money in those programs. As far as I'm concerned and, I think, the subcommittee's concerned, you should get ready to spend the rest of the money on the battery research. As far as I'm concerned, that's the key. With your experience in the solar field, you recognize that even there, there has been and is a problem, how to store energy.

Mr. DAVIS. Yes, sir.

Senator REID. I would think if there's anything that we've talked about all day that should not be cut back, it should be the development of a battery or batteries that may give us some extended use.

We really haven't made a lot of progress, have we, in that regard?

Mr. DAVIS. We have started investigations in many battery couples. And I think the key to it again is to choose among those and apply the appropriate resources to a fewer number of choices so that progress is both quicker and substantial.

Senator REID. What is your total budget for this battery program—last year? About $8 million approximately? Isn't that right?

Mr. DAVIS. It was just less than $8 million last year.

Senator REID. And you're recommending this year?

Mr. DAVIS. $3.6 million.

Senator REID. I think for something that's that important—as I indicated earlier, over $100 billion a year is spent on automotive motors, is that right——

Mr. DAVIS. Fuels.

Senator REID [continuing]. Fuel for those motors, engines, over $100 billion. You're recommending that we spend $3.5 million approximately this year to study a battery which could significantly reduce the demand for fossil fuel.

I would think if there is a program that you have that needs additional work, this is it. And, I think you should get geared up to do it.

Mr. DAVIS. Yes, sir.

ELECTRIC AND HYBRID VEHICLES

Senator REID. Would you provide for the record a research status report for each of the several batteries which are currently under study, indicating how much Federal money has been spent on each battery concept to date, the milestones which have been accomplished to date, the principal milestones which remain to be accomplished for successful commercialization, unanswered technical issues, the likelihood that these remaining issues can be solved if funds are available, fiscal year 1991 costs to continue an aggressive research program for the particular battery, the anticipated remaining Federal cost to carry the research to the point where a full-scale prototype battery is successfully operating (if possible), the estimated date for commercial availability, and the particular characteristics of the battery.

Mr. DAVIS. I will provide that information for the record.

[The information follows:]

RESEARCH STATUS OF ELECTRIC VEHICLE BATTERIES

The Battery Technology Data Table below provides the funds to date, FY 1991 costs to continue a research program for each battery, the cost to complete, and estimated commercialization date for each battery technology. The milestones accomplished, milestones to be accomplished, issues, probability of success, and particular characteristics for each battery technology are also provided. Zinc-air and nickel-metal hydride are being evaluated for their potential for electric vehicle application. If the evaluations indicate the potential for these batteries is as great as initially indicated, they will replace candidates that have a lower probability of success.

BATTERY TECHNOLOGY DATA TABLE
($ in millions)

Battery	Funds to Date a/	FY 1991 Costs	Cost to Complete	Commercially Available
Sodium-Sulfur	19.58	1.60	5.00	1994
Zinc-Bromine	2.98	1.00	2.00	1996
Lithium-Metal Sulfide	0.93	1.00	3.80	1995
Sodium-Metal Chloride	0.719	0.50	7.30	1996
Nickel-Iron	12.78	0.75	1.50	1992 b/
Iron-Air	2.581	0.67	1.54	1994
Advanced Lead-Acid	2.97	0.50	1.50	1994
Zinc-Air	0.381	0.70	5.00	1996
Nickel-Metal Hydride	0.334	0.50	3.00	1995
Ultracapacitor	0.286	0.50	1.00	1993

a/ In addition to the funding shown, the DOE Division of Energy Storage and Distribution has spent approximately $180 million on generic battery research from Energy and Water Development appropriations.

b/ Current technology produced in pilot plant in 1992; low cost technology in 1994

Sodium-Sulfur

Milestones Accomplished
- One-third full scale battery designed, fabricated and evaluated in the laboratory
- Full size experimental battery fabricated for ETX-II

Milestones to be Accomplished
- Fabrication of ETX-II battery system with improved low cost cells
- Design common cell optimized for four advanced electric vans
- Design, fabricate, and evaluate an integrated "battery system" with optimized cells in a van

Issues
- Short freeze/thaw cycle life
- Corrosion initiated cell leaks
- Weight and size optimization

Probability of Success: High

Particular Characteristics
- High energy density, cycle life, and operational temperature

Zinc-Bromine

Milestones Accomplished
- Fabricated 1 kWh stack with improved sealed design
- Battery concept incorporating improvements in separator and electrode materials and electrolyte composition
- System redesign to improve battery performance

Milestones to be Accomplished
- Test 1 kWh and fabricate 8 kWh cell stacks to demonstrate improved performance and life
- Fabricate and test 48 kWh vehicle battery

Unresolved Issues
- Fabrication problems with the new design resulting in premature cell mechanical failure.
- Fabrication of 48 kWh vehicle battery

Probability of Success: Medium

Principle Characteristics
- Medium power density with adequate performance
- No expensive materials are utilized

Lithium-Metal Sulfide

Milestones Accomplished
- Multiplate cells of 300 Ah capacity designed, built and evaluated
- 36-volt sub-battery fabricated and evaluated

Milestones to be Accomplished
- Fabrication of 36-volt sub-battery with improved cells having high energy and power
- Fabrication of full-size experimental EV battery for van application
- Fabricate and evaluate full-size proof-of-concept EV battery

Issues
- Enhance specific power and life
- Charge equalization
- Thermal management and reliable hermetic seals

Probability of Success: Medium

Particular Characteristics
- High energy density
- High operational temperature
- Attractive safety characteristics

Sodium-Metal Chloride

Milestones Accomplished
- Preliminary EV battery conceptual design study

Milestones to be Accomplished
- Final conceptual battery design study
- State-of-the-art cell evaluation
- Design and develop experimental battery
- Design, develop, fabricate and evaluate proof-of-concept battery for van application

Issues
- Enhance specific power
- Weight and size optimization

Probability of Success: High

Particular Characteristics
- High energy density, reliability, and operational temperature
- Potentially low cost
- Simplified battery string design
- Electrodes do not react violently if electrolyte breaks

Nickel-Iron

Milestones Accomplished
- Demonstrated as electric vehicle battery
- Excellent perfromance and cycle life characteristics

Milestones to be Accomplished
- Cost reduction through thick powder and fiber plate technology
- Improved battery charging and gas management

Issues
- Demonstration of thick powder and fiber plate technology
- Demonstration of improved charging techniques
- Demonstration of improved hydrogen control or recombiners

Probability of Success: Performance - Medium

Particular characteristics
- Medium energy density
- Long life

Iron-Air

Milestones Accomplished
- Completed empirical model of bifunctional air electrode and its verification
- First generation full size cells (400 cm2) have shown viability of the technology for EVs

Milestones to be Accomplished
- Demonstrate cell performance at 50 percent Wh efficiency
- Demonstrate parallel stack specific power (79 W/kg) and acceptable life (600 cycles) using SFUDS EV driving cycle
- Fabricate and evaluate first generation full size battery
- Design, fabricate, and evaluate proof-of-concept EV battery for van application

Issues
- Complex system
- Bifunctional air electrode design and operation
- Low energy efficiency
- Iron electrode gassing

Probability of Success: Low

Particular Characteristics
- High energy density
- Ambient operational temperature
- Projected low cost

Advanced Lead-Acid

Milestones Accomplished
- Tested flow-through and flow-by designs to demonstrate improved energy and power density

Milestones to be Accomplished
- Fabricate hybrid design for testing to extend battery life
- Review experimental data on capacity loss at high power

Issues
- Low cycle life

Probability of Success: Medium

Principle Characteristics
- Adequate performance
- Supported by an existing battery industry

Zinc-Air

Milestones Accomplished
- Program Definition

Milestones to be Accomplished
- Design and fabricate full size (175 Ah) EV cell
- Evaluate life and power of bi-functional air electrode
- Fabricate and evaluate first generation full size battery
- Design, fabricate, and evaluate proof-of-concept EV battery for van application

Issues
- Simplification of system
- Bifunctional air electrode performance and life

Probability of Success: Medium

Particular Characteristics
- High energy density
- Ambient temperature
- Attractive safety characteristics
- Low projected cost

Nickel-Metal Hydride

Milestones Accomplished
- Evaluated cells with 3.5 Ah capacity

Milestones to be Accomplished
- Fabricate and evaluate prototype 50 Ah cells
- Fabricate first generation of 175 Ah cells
- Fabricate and evaluate 175 V, 175 Ah experimental battery
- Fabricate and evaluate proof-of-concept EV battery for van application

Issues
- Charge retention
- Operation in low temperature environment
- High internal resistance

Probability of Success: High

Particular Characteristics
- High energy density
- Ambient operational temperature
- Attractive safety characteristics
- Contains no toxic or hazardous metals
- Potentially low cost

Ultracapacitor

Milestones Accomplished
- Program Definition

Milestones to be Accomplished
- Fabricate and evaluate first generation ultracapacitor with power of 500 W/kg and energy > 5 Wh/kg
- Design, fabricate, and evaluate full size proof-of-concept ultracapacitor integrated with EV battery

Issues
- Cycle life
- Integration of devices into EVs

Probability of Success: Medium

Particular Characteristics
- Very high specific power
- Low energy density
- Ambient operational temperature
- Potential for significant increase in range

ADVANCED MATERIALS

Senator REID. I'd like now to spend a little bit of time on advanced materials.

Your budget request contains about $14 million for fiscal year 1991. This represents a small reduction of $636,000. Within this program, we have considerable resources being shifted from development of new materials and processing techniques to evaluation of existing materials.

What is the rationale for reducing the research on new materials, especially at a time when you're also proposing elsewhere to eliminate one ceramic engine team? Won't the lower funding level hamper the developing of a U.S. ceramics industry?

Mr. DAVIS. Again I would refer to the total $25 million investment in ceramics within the overall program. Clearly it is important, we must pursue these programs as they support the sectors. What we've tried to do is move more of that work into the direct sponsorship, into the transportation program, into the industry program. And as we do that, again, I think it provides at least the opportunity to make a much better case for the value and benefit of materials work.

We also would expect to, as I mentioned earlier, achieve better leverage within the Department. There is work that is conducted in the energy research program, also looking at materials, and new materials, as we begin to focus on more of the applications of those materials.

Senator REID. What advances have been made during the past year in the development of high-temperature tolerant, noncorrosive materials which substitute, in many cases, for strategic and critical materials that are in short supply in this country?

Mr. DAVIS. There have been many advanced materials development project accomplishments during the past year which provide industry with options for substitution of strategic and critical materials. Some examples are: the development of ceramic-to-metal braze systems and analytical tools for design of high temperature silicon nitride and silicon carbide applications; the development of an environmentally sound aqueous powder milling process at Norton that contributes to producing reliable silicon nitride components for any application; the successful preparation of significant numbers of cast specimens using the ceramic gel-casting process developed at Oak Ridge National Laboratory; the development of an ultra-low thermal expansion and high thermal shock resistant ceramic capable of having stable properties above 1,200 degrees Centigrade; the initiation of licensing discussions for a high-quality silicon nitride powder processing technology developed by Ford for commercial scale-up; the development of PC software for estimation of Weibull modulus from specimens of different sizes and geometries for use by industry and the scientific community; the development of a turbomilling process for blending ceramic whisker composites and the transfer of the technology to industry; the design, build, and test of a microwave furnace suitable for the sintering of silicon nitride; the completion of the development of low-friction and wear-resistant coatings for application in low heat-loss diesel engines; the completion of the installation of specialized equipment for testing high temperature creep and stress rupture of ceramics available for industry use; and the completion of nuclear magnetic resonance imaging studies to measure the distribution of the organic binder in various stages of the injection molding process for silicon nitride parts.

HIGH TEMPERATURE MATERIALS LABORATORY

Senator REID. Associated with the request for advanced materials development is an additional $2.8 million for the operation of the High Temperature Materials Laboratory in Oak Ridge, TN.

Would you elaborate on the interest and involvement of the private sector in this facility?

Mr. DAVIS. I think that's an example of a clear success. It appears that we have substantial private sector activity. I don't have an exact number, but I think there's about 40 agreements.

There appears to be a facility here that's of direct benefit to industry as well as the university and the research community. And I think it's a clear example of a successful approach.

Senator REID. Why, at a time when the laboratory's operating budget request has expanded by 23 percent, has the request for new capital equipment been eliminated?

Mr. DAVIS. We have requested some in capital equipment there and I think this is a situation where the budget is out of sync just a little bit with our new information. We now know of equipment that is available to that laboratory which we didn't know of when the budget was put together. That happens to be Japanese equipment. We're going to participate in reviewing and evaluating that equipment as it might apply. And certainly, I think, within next year's program we would request that additional capital equipment.

Senator REID. Won't the plan to expand the High Temperature Materials Laboratory's operations be restricted by a lack of capital equipment to fully furnish the two new user facilities as well as the four established user centers?

Mr. DAVIS. The planned expansion of the High Temperature Materials Laboratory's operations is now underway. In fiscal year 1990, both operating and capital equipment funds were added to the appropriation for the addition of two new user centers at the HTML—a Ceramic Specimen Preparation User Center and a Residual Stress User Center. To finally complete these centers, an additional $400,000 would be required for capital equipment. In addition, a scanning transmission electron microscope with the capability for probing ceramic composition interfaces on a scale of a few nanometers has recently become available. This instrument would greatly improve the capabilities of the existing user centers and would require $1.4 million for capital equipment.

Since the fiscal year 1991 request does not include funding for additional equipment for the HTML, these capital equipment requirements would add a total of $1,800,000 to the budget. However, due to delivery and installation schedules, a reasonable requirement would be $1 million in fiscal year 1991 and the remaining $800,000 in fiscal year 1992.

Senator **Reid**. Please provide for the record an itemized list with costs of the capital equipment which is needed to make the High Temperature Materials Laboratory fully operational and state of the art.

Mr. **Davis**. I will provide that information for the record.

[The information follows:]

HIGH TEMPERATURE MATERIALS LABORATORY EQUIPMENT

Below is an itemized list of the capital equipment required to make the High Temperature Materials Laboratory fully operational and state of the art:

Description	Fiscal year cost—	
	1991	1992
High resolution analytical TEM	$800,000	$400,000
Work station system	30,000	
Furnace for scanning calorimeter	50,000	
Environmental system for cyclic fatigue	120,000	
Neutron residual stress system		300,000
Heat attachment for laser flash diffuser		30,000
Upgrade system for ESCA/SIMS		35,000
Upgrade system for DTA/TCA		35,000
Totals	1,000,000	800,000

STATE AND LOCAL ASSISTANCE PROGRAM

Senator **Reid**. This year the budget proposed sharp reductions in the State and local assistance program grants. Your request of $30 million is 86 percent below the fiscal year 1990 appropriated level.

What is the justification for the sharp reduction in the request for these grant programs?

Mr. **Davis**. Sir, our strategy there was that we requested funding consistent with supporting all of the people associated with the delivery process, roughly $15 million. So all personnel associated with the programs are, in fact, provided for. And also included within that $15 million is an evaluation to get a better understanding of the benefits of the weatherization program.

The second part of our request, an additional $15 million, is aimed at trying to accomplish two objectives. The first is to solicit from States innovative ways to proceed with weatherization. We're doing this based on our knowledge that some States have had substantial success here. That's $5 million.

The other part of it is $10 million to match funds where the States are able to bring some of the resources of the private sector, possibly utilities into the funding equation as they look for additional demand-side reduction opportunities.

PETROLEUM OVERCHARGE FUNDS

The third part of the issue that we looked at is the substantial balance of funds, petroleum violation escrow funds, that in our records appear to be unexpended and in fact available to the States.

We have to somehow .come to a better understanding of how many funds are actually available and what the priorities of those funds are, because our numbers would suggest that funds in addition to current year appropriations exist in all States. And, in fact, in every State but two, twice the amount of funds that have actually been appropriated for these programs are still available and still unexpended.

Senator **Reid**. The administration argues that the States have ample petroleum violation escrow moneys to fund the State and local grants, as well as to cover much of the low-income home energy assistance programs.

Is there any indication that the distribution of oil overcharge moneys to the States bears any correlation to the States' needs under the present State grants formulae?

Because it's argued that where this overcharge money goes to the wrong place, as far as matching the two programs. The States that have high energy costs, they don't get the money. It's the States like California where these overcharge moneys go and they don't have high energy costs for heating, so it doesn't match up.

Could you argue that? I mean, how do you—how can you——

Mr. **Davis**. Yes, sir, you could argue that. It's a complex issue.

Senator **Reid**. I guess what I wanted to say is how can you argue against that because, factually, that's the way it is.

Mr. **Davis**. Well, again I don't think our argument is against the program. In fact, Admiral Watkins is on record as indicating that he will request moneys to support the missions of these programs as that's required. We have an issue here to address, and that's to really view what funds are available within the States and what priority could be associated with those in terms of funding—not only these programs but others.

It's also clear that the States do their planning assuming a level of appropriations that isn't contained in this request. But I do believe that we can sit and work productively with the States to resolve this whole issue of what funds are actually available and remain unexpended.

The amount of interest that these programs earn alone would suggest that there's a substantial amount of money essentially in the bank. And our question is how much more money actually needs to be provided.

Senator **Reid**. But again my argument would be that if, in fact, there is interest building up, it's building up in the wrong States. I think that what we have here with your budget generally is one that's driven by the Office of Management and Budget's setting a target figure for you to arrive, you to start whacking any place you can and it winds up being inequitable. Here is a perfect example where a funding mechanism which will create obvious regional inequities.

I have a number of questions that I'm going to submit to you in writing on this whole area. I think you better spend some time on this, which I know you will, because with the work that we've done on it, it appears that we're going to wind up with some real inequities. New England would fall short of the escrow funds needed to match their 1990 grant programs significantly.

Mr. **Davis**. Sir, I would draw your attention to one point, however, in terms of the inequities in the program and how the moneys are actually directed.

I think it's important to consider what we're trying to do with our incentives—trying to draw from States additional ways to bring money both public money and private money to the programs through this solicitation. This incentive approach may be part of the solution in addressing how the funds are allocated to these purposes in the future. We didn't spread our money willy-nilly here, we tried to focus on two things. One is to make sure the delivery mechanism is maintained and, two, a way of bringing incentive and maybe some possible creativity to the funding picture in the future.

Senator REID. If you look at this though fairly, these oil overcharge distributions to the States were restitution of funds for overcharges which occurred during the seventies. These funds belong to the States, not to the Federal Government. The courts awarded them the offset. They did not award them to offset Federal funding for DOE State and local grant programs. It seems tremendously unfair. In addition to the fact that the moneys that you're trying to save aren't yours, they're also going to the wrong place.

STAFFING LEVELS

The committee notes again this year that you're proposing to reduce employment levels for the energy conservation program. The budget request reflects a reduction of 54 full-time equivalents from the mandated employment floors which Congress imposed in 1982.

So, at a time when the administration is giving much greater funding and visibility to energy conservation, what is the rationale for sharply reducing the personnel necessary to carry out these programs?

Mr. DAVIS. We have a major issue to resolve internally regarding the level of people needed for these programs in fiscal year 1991. We've made some progress on the level of resources in terms of the dollars required, and we need to make further progress on the level of personnel required.

Senator REID. That was an interesting answer.

Congress expects the Department to meet its requirements under the law. What would be your total funding requirement for program direction in each of the conservation research programs and in the State and local program areas?

This is something you'll have to spend a little time on and we expect an answer in some detail.

Mr. DAVIS. I can provide a partial answer in that the moneys being requested actually are consistent with the larger number of FTE's that we think are required for the program. So while the dollars are about right, we need to do further work on the slots.

Senator REID. Mr. Davis, you have a difficult job and one that's very important. The work that you do—and you're spending relatively few dollars compared to this massive Federal budget that we have—and I know that you have to be a team player and you've certainly done a good job of trying to justify a budget that I'm sure you don't agree with. You don't have to comment on that. I'm sure that what was submitted to the Office of Management and Budget is significantly different than what we have here today.

For some of the big problems we have in Government today, dealing with automobile pollution and other areas, you are uniquely qualified to handle the job that you have. You're not some political hack that came in to fill a responsibility, you've got a good education, you've had significant experience, and you've got a big job to do.

ADDITIONAL COMMITTEE QUESTIONS

I look forward, as does the subcommittee and the full committee, to working with you. We've submitted a number of detailed questions that we will expect you to answer at the earliest opportunity.

We thank you very much for your testimony and appreciate your associates being here with you. We'll have, as I indicated, other questions for a written response. We would hope to have your responses within 3 weeks. And I know that's a lot of work, but we need to get this budget moving along.

Thank you very much.

Mr. DAVIS. Thank you.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Chlorofluorocarbons

Question: Please describe generally what DOE is doing with respect to reducing the use of chlorofluorocarbons.

Answer: The Department of Energy (DOE) is conducting research and development focused on substitute materials and alternative technologies which are not dependent on the use of chlorofluorocarbons (CFCs).

Question: Please provide a CFC funding cross-cut for all of your activities in FY 1990 and FY 1991.

Answer: The various activities on alternatives to chlorofluorocarbons underway within the Conservation Offices are delineated below. Total funding is $9,337,000 for FY 1990, and $8,814,000 is requested for FY 1991.

OFFICE	FUNDING ($000) FY 90 Estimate	FY 91 Request
Buildings and Community Systems	$7,142	$7224
Transportation Systems	575	0
Industrial Programs	870	750
Energy Conversion and Utilization	750	840
TOTAL	$9,337	$8,814

OFFICE OF BUILDINGS AND COMMUNITY SYSTEMS

- Joint project with industry and EPA for the development of rigid foam insulation made with alternative non-CFC blowing agents.
- Research on the use of reflective flake additives to improve the energy efficiency of foam insulation.
- Calibration of test equipment commonly used by foam insulation manufacturers.
- Development of advanced technology powder-filled evacuated insulation to replace CFC foam insulation.
- Expand cooperative research efforts with industry consortia on materials compatibility and lubricants for alternative refrigerants for CFCs.
- Initiate two-year cost shared field evaluation of residential size advanced cycle absorption heat pump and fabricate prototype units.
- Continue research on nonazeotropic refrigerant mixtures, including research on innovative heat exchanger concepts, for improving the performance of refrigeration cycles.

OFFICE OF TRANSPORTATION SYSTEMS

- A cooperative project with Dow Chemical is developing advanced coatings for automotive windows to reduce cooling requirements and modifying existing models developed for calculation of heat loads in buildings to estimate the effect of the new coatings on the temperatures of automobile passenger compartments.

- A project is evaluating the safety issues concerned with the use of non-inert refrigerants as substitutes for CFC working fluids in automotive air conditioning systems, focusing on the potential for advanced technology to reduce risks associated with the flammability properties of non-inert refrigerants.

- An investigation will be performed under an industry contract to determine the potential for mixing CFC 12 with non-CFC fluids as a suitable replacement for CFC refrigerants used in existing automotive conditioning systems.

OFFICE OF INDUSTRIAL PROGRAMS

- A project to develop advanced 8,000 CFM Brayton Cycle recovery equipment to recover volatile organic compounds which include large amounts of CFCs from industrial process air.

- Cooperative project with Southern California Edison and EPRI for the collection of design data on recovery of solvents containing CFCs from process air using a mobile unit.

- Research project to develop a magnetic refrigerator that replaces normally used CFC refrigerants with magnetic solid materials.

OFFICE OF ENERGY CONVERSION AND UTILIZATION TECHNOLOGY

- Project for the development of magnetic energy conversion as an alternative refrigeration technology (in support of the work being conducted by Industrial Programs).

- Research on multiphase flow and heat transfer in small channels using nonazeoptropic mixtures (for both refrigeration and heat pumps).

- Project on the prediction and measurement of multicomponent mixture thermo-physical data (for both refrigeration and heat pumps).

- Development of non-CFC insulations using hollow ceramic spheres and microporous foam, aerogel materials (for industrial furnaces and appliance insulation).

Buildings Materials

Question: In the Building Materials sub-program you have been developing a plan for Federal research on CFC substitutes and alternatives. Would you describe what the present status of this plan is?

Answer: The plan for Federal research on CFC substitutes and alternatives for insulating materials was completed in FY 1989 and its recommendations are currently being implemented. The plan was developed in cooperation with the National Research Council of Canada, EPA, the foam insulation industry, and universities. It defined and priority ranked 29 research projects and identified the appropriate sectors for conducting the research. The current activities of the Building Materials sub-program reflect the recommendations put forth in this plan.

Question: How is the development of this plan being coordinated with industry and with foreign countries?

Answer: The development of this plan was fully coordinated with industry as represented by private companies and their manufacturing associations. The plan is being implemented through a joint project with industry and EPA for the development of alternative non-CFC blown foam insulation boards. A steering committee composed of representatives from industry (Mobay Corp., Dow

Chemical, Dupont, Celotex, Jim Walters Research, Atlas Roofing Corp. and Allied Engineering Materials), manufacturing associations, (Polyisocyanurate Insulation Manufacturers Associates, Society of the Plastics Industry and National Roofing Contractors Association) and DOE and EPA oversee the activities of this project, which is conducted at the Oak Ridge National Laboratory.

Question: When in FY 1991 do you anticipate completing this plan?

Answer: The plan is complete and is being implemented.

Question: Is this plan limited to research or might this plan become the basis for a regulatory program to limit the use of CFC's?

Answer: The plan itself is limited to the definition of appropriate research activities which will lead to a reduction in the use of harmful CFC's.

Building Subsystems

Question: In the Building Subsystems program, you have had considerable success in developing and commercializing high performance windows. Congress has been very supportive of the windows research projects in the past. Why, then, is this area proposed to suffer a 24 percent reduction in the FY 1991 request?

Answer: The demands for accelerating window performance research to support industry, State and utility interests in a credible uniform window energy rating system have increased only recently. Likewise, the recent introduction of high performance windows and several anticipated near term product introductions, based on DOE/LBL superwindow technology, are only now resulting in industry demands for increased technical support and for including superwindow capabilities in the window rating system now under development. We will be considering such needs in FY 1992 and later budget requests. In the meantime, we are working with industry and our Canadian research partners to focus our resources on research to support the development of a technically credible rating system. By working cooperatively with industry and the Canadian Department of Energy, Mining, and Resources, we have been able to achieve funding leverage and are thus able to reduce our funding requirements in this area.

Roof Research Center

Question: Last year, DOE's Roof Research Center became available for private research projects. What has been the private sector's use of the facility to date and how fully subscribed is the facility for the remainder of FY 1990?

Answer: Private sector use of the DOE's Roof Research Center to date has been encouraging. The Center has developed an industry responsive roof research plan with the help of the Roofing Industry Advisory Panel. In FY 1989, EPA and three industry groups, namely, the Society of the Plastics Industry (SPI), the Polyisocyanurate Insulation Manufacturers Association (PIMA), and the National Roofing Contractors Association (NRCA), joined DOE to develop environmentally safer non-CFC foam roofing insulations. This is a 3-year project and part of the thermal testing of these new insulations is being conducted at the Roof Research Center.

This project has created the need for a Roof Mechanical Properties Research Apparatus at ORNL on which measurements will be made of the mechanical properties of various new roofing systems and materials assembled using standard installation practices. The estimated cost of this new research apparatus is $240,000 of which $75,000 will be funded jointly by PIMA and SPI, $25,000 by NRCA and the rest by DOE.

Industry interest in participating in collaborative projects at DOE's Roof Research Center and their willingness to contribute to such research and facilities appear encouraging. More projects having industry interest are being explored currently. The Roof Research Center is about 30 percent subscribed by the private sector for the remainder of FY 1990.

Buildings Subsystems Interaction Program

Question: In the Buildings Subsystems Interaction program you are requesting an increase of more than $1.5 million, or more than 67 percent above the FY 1990 level. Would you elaborate on the need for this large increase and indicate whether it is associated with additional field testing of equipment or with the development of "building instrumentation and energy monitoring projects"? (We cannot tell from your budget justification.)

Answer: The majority of additional funding requested for the Building Subsystems Interaction activity is for a joint industry/government research effort to measure performance (instrumentation and monitoring) of several advanced system integration technologies by implementing them in new and existing buildings. Completed analytical studies show promise, and industry representatives have supported testing, but more extensive testing has been delayed pending the completion of the Building System Integration Laboratory (BSIL) feasibility study.

As a result of the BSIL feasibility study, the Administration believes that many of the objectives of the commercial building system integration program can be achieved through careful instrumentation and monitoring of new and existing buildings without a dedicated laboratory. This project will allow us to test this approach.

Standards and Guidelines

Question: In the Buildings Standards and Guidelines program, the budget justification (page 283) indicates that demonstration projects will be conducted in at least five climatic regions. How many demonstrations will be planned in each climatic region?

Answer: Each region would have at least one and possibly two representative demonstrations. Three prototypical residential buildings would be addressed: single family and multifamily site-built homes and single-wide manufactured (mobile) homes. Two demonstrations in a region would be conducted only if it is deemed necessary to reflect a significantly unique climatic impact in that region.

Question: How much is requested for this specific project in FY 1991 and what are the funding implications for future years?

Answer: The funding requested for FY 1991 is $1,000,000. These funds will be used to complete the voluntary residential demonstration project, and to respond to the legislated reporting requirements on the impact of the standards. No future funding is anticipated within the current scope of the residential demonstration project required by legislation.

Question: How does the work in support of these demonstrations differ from the activities identified on page 284 of the budget justification where you plan to "create and support management teams to conduct demonstrations..."?

Answer: The work in support of the legislated demonstrations on page 283 relates to the analytical assessment of the impact of the residential standards. The work on page 284 reflects the Department of Energy's support of a new initiative to train users in the application of the commercial building standards, hold a highly visible design competition to foster use of the standards, and to encourage their adoption by State and local governments

Alternative Fuels

Question: I understand that testing data for alternatively-fueled medium- and heavy-duty engines is urgently needed to evaluate the effect of EPA's 1991 and 1994 standards for particulate emissions from diesel engines. At the level of funding requested by DOE in FY 1991 for this work on trucks and buses, will the alternative fuel data be ready so that these diesel trucks and buses will be able to comply with the EPA standards in a reasonable manner? If not, what will be the impact of these new standards on the truck and bus diesel market?

Answer: The current EPA truck ~~and bus~~ emission standards are listed below in g/bhp-hr (grams/brake horsepower-hour) measured during EPA heavy duty engine tests. Further legislation is under consideration which could result in some modification of these standards.

Urban Bus Heavy-Duty Emission Standards

Year	Nox	HC	CO	PM
1990	6.0	1.3	15.5	0.60
1991	5.0	1.3	15.5	0.10
1994	5.0	1.3	15.5	0.10

Heavy-Duty Truck Engine Emission Standards

Year	Nox	HC	CO	PM
1990	6.0	1.3	15.5	0.60
1991	5.0	1.3	15.5	0.25
1994	5.0	1.3	15.5	0.10

The alternative fuel data obtained through the implementation of the Automotive Motor Fuels Act (AMFA) and other alternative fuels utilization R&D carried out at the level of funding requested in FY 1991 should have little or no impact on the ability of diesel trucks and buses to comply with the 1991 certification standards. The AMFA efforts will initiate on-site emission data collection of field operating units beginning in calendar year 1991, with a significant amount of data expected to be available by mid-year 1992. The AMFA data should have an impact on the ability of industry to comply with the 1994 certification standards, and should have a major impact on determining the ability of current technology to maintain the 1991 and later standards in actual operating conditions.

Question: Would you describe your work to date with engine manufacturers to coordinate your demonstration and testing programs in this area?

Answer: Discussions have been held with all of the major engine manufacturers to coordinate planned demonstration and testing programs including Detroit Diesel Corporation, Cummins Engine Company, Hercules, Caterpillar, and Mack.

In addition to multiple on-site visits at engine manufacturers, on-site visits have been made at major mass transit authorities to inspect available service, repair, engine testing and engine modification facilities as well as data collection methodologies in use. Arrangements are being made to acquire existing and future data from on-going demonstration activities such as those in California and New York. Meetings have been held with both Detroit Diesel Corporation and Hercules to establish cooperative programs with the Gas Research Institute, as well as Cummins regarding a newly developed natural gas engine for buses.

Coordinating meetings have also been held with the Urban Mass Transportation Administration, State and local agencies, the American Trucking Associations, the Natural Gas Association, the Corn Growers Association, and other trade and operating groups.

Question: What more are you planning to do with industry in the future?

Answer: During FY 1990 and FY 1991 requests for proposals (RFPs) will be issued for both alternative fuel engine types and industrial fleet operator demonstrations. These RFPs will be coordinated with and through State agencies such as the California Energy Commission and the New York State Energy Research and Development Administration to assure compatability of data acquired and the maximum cost-effective utilization of available funds.

Based on our preliminary investigations, forecast industry involvement is as follows: CNG truck engines - Cummins and Caterpillar in 1990, Detroit Diesel and Hercules in 1992; methanol/ethanol truck engines - Cummins in 1990, Caterpillar and Detroit Diesel in 1992; CNG bus engines - Cummins in 1990, Detroit Diesel in 1992; and methanol/ethanol bus engines - Detroit Diesel and Cummins in 1990.

Question: Has industry indicated a willingness to cost-share your testing and data collection effort?

Answer: Industry has indicated a willingness to cost-share testing and data collection efforts. Although the collection of data will be managed and carried out by Department of Energy contractors to insure data reliability and compatability, industry will be involved in performance and maintenance data. Engine manufacturers can be expected to contribute in-kind cost sharing for monitoring engine performance and component failures and safety related problems. Engine manufacturers will also normally staff on-site engineers to monitor demonstration activities and provide technical inputs. Commercial trucking fleets have indicated a willingness to absorb additional operating costs from demonstration activities, and transit authorities have expressed the same type of commitment.

Electric Vehicle Propulsion

Question: The electric vehicle propulsion subprogram request contains $2.5 million to continue a project that Congress initiated last year to develop modularized electric vehicle components. This research is targeted for a mid-1990s availability, is that correct?

Answer: The modularized electric vehicle program is scheduled to be completed by the end of FY 1994. At that time the propulsion components will be modularized and suitable for use in a wide range of vehicles thereby bringing the technology a step closer toward commercialization.

Question: Is there any particular importance attached to the development of these modularized components in that time frame?

Answer: The development of the modularized components parallels Ford's proposed in-house program plan to develop electric vehicles by the mid-1990's utilizing the modular propulsion system components developed under the DOE effort.

Question: What is Ford's cost-sharing percentage in this program?

Answer: Ford has cost shared in ETX-I and ETX-II programs with DOE at five percent. We intend to negotiate this program at direct cost share of twenty percent. In addition, Ford plans to initiate an in-house program to develop the vehicle for the propulsion system and construct thirty prototype vehicles for field test. The cost of this activity is estimated to be approximately fifty percent of what the government is funding on the modularized electric vehicle program. Thus, Ford's combined direct and indirect cost sharing will be about 43 percent.

Question: Given their level of cost-sharing, do we have an obligation, or some sort of implicit commitment, to push this technology development on a timely path?

Answer: The modularized program is a natural extension of the ETX technology which was chosen by DOE on the basis of its potential for high performance and low manufacturing costs. DOE's commitment to this technology has always been to accelerate the development effort so that the technology will be ready for commercialization by industry by the mid 1990's.

Question: Ford's original proposal assumed that federal funding in the second project year would be $3 million, or $500,000 more than the amount requested in the budget. What will be the impact on the project's schedule at this lower funding level?

Answer: The lower funding level will slip Ford's proposed schedule by approximately six months.

Fuel Cell Bus

Question: The budget contains $2 million to continue development of the fuel cell bus. Based on the present state of technical development, does the fuel cell bus appear to be economically viable in the near-to-mid-term future?

Answer: The present R&D program is directed at showing the technical viability of the phosphoric acid fuel cell system as a power source for an urban bus. Economic viability can not be established with good credibility until an acceptable system design has been proven in the laboratory and in field tests on a bus. However, economic assessments have been conducted and will continue as the R&D program proceeds in order to ensure that the resulting system has a high probability of being economically viable.

The present cost projections for the purchase and operation of the phosphoric acid fuel cell powered bus using methanol fuel indicate that it will have a life cycle cost comparable to that of diesel buses. Although the fuel cell bus will have a higher initial purchase price, its lower fuel and maintenance costs should make it cost-competitive with diesel buses in the mid 1990's. These economic assessments are detailed in the final reports of the Phase I contractors. Furthermore, the fuel cell powered bus offers major advantages in terms of reduced air pollution, quiet operation and the utilization of a nonpetroleum-based fuel. An ad hoc Advisory Panel has indicated that transit operators would be willing, if necessary, to pay some cost premium for these benefits.

Question: What is the status of the fuel cell bus project?

Answer: The project is proceeding as planned. The Phase I effort, proof-of-feasibility, has been completed and final reports on Phase I work have been prepared. In Phase I, the two contractors each fabricated a complete fuel cell/battery power source system (half the size required for the bus) and evaluated the system in the laboratory. The team of Booz Allen & Hamilton, Chrysler Pentastar Electronics, and Fuji Electric completed the design of a liquid-cooled phosphoric acid fuel cell/battery propulsion system for an urban transit bus; this team then built and tested a 68-kW fuel cell/battery power source system consisting of a 25-kW fuel cell and 43-kW lead-acid battery, a dc chopper to step up the fuel cell output voltage to match that of the battery, and overall system controls. The team of Energy Research Corporation, Los Alamos National Laboratory, and Bus Manufacturing, Inc., completed the design of an air-cooled phosphoric acid fuel cell/battery propulsion system for a bus; this team built and tested a 62-kW power source consisting of a 32-kW fuel cell and 30-kW nickel/cadmium battery, connected in parallel. The test results verified the performance predicted by the design analyses and confirmed the feasibility of the fuel cell bus concept.

Based on the Phase I tests results, the positive recommendations of an ad hoc Advisory Panel, and the findings of an independent study performed for DOT/UMTA, all program sponsors (DOE, DOT/UMTA, and the California South Coast Air Quality Management District) have agreed to proceed to Phase II, which is directed at installing a full-size fuel cell/battery propulsion system in an urban bus. Sources are now being sought in a competitive procurement to perform the Phase II system design and integration work.

Question: Please provide for the record a project milestone plan along with an annual funding plan for each of the participants for the life of the project.

Answer: The project milestone plan is provided below:

March 1992	- Complete development and laboratory evaluation of proof-of-concept fuel cell battery propulsion subsystem for test bed bus
March 1993	- Complete laboratory evaluation of test bed bus with proof-of-concept fuel cell battery; decide on continuing to Phase III (field testing)
April 1994	- Complete field testing of test bed bus; DOT/UMTA and SCAQMD to decide on proceeding to Phase IV

The annual funding plan for each of the project participants (in thousands of dollars) is provided below:

Participant	FY1990	FY1991	FY1992	FY1993	FY1994	FY1990-94
DOE	2,000	2,000	2,500	2,500	1,500	10,500
DOT/UMTA	1,000	1,500	700	800	500	4,500
SCAQMD	600	800	700	100	100	2,300
Total	3,600	4,300	3,900	3,400	2,100	17,300

Question: What is the present level of cost-sharing in the fuel cell bus program?

Answer: Two industry contracting teams carried out the R&D in Phase I of this program. The Booz Allen & Hamilton team provided a direct dollar cost-share of 32 percent of the total costs; the Energy Research Corporation team provided an in-kind contribution equal to 23 percent of their project costs. Cost sharing by the Phase II contractor during FY 1990-93 is expected to be about 30 percent of the total costs.

Question: Have market penetration studies been completed for the fuel cell bus? If so, would you summarize their conclusions with respect to potential energy savings?

Answer: Preliminary market studies indicate that there are 120,000 diesel buses now operating, with an average annual mileage of 50,000 miles and a fuel economy of 3.2 miles/gallon, consuming 220 trillion Btu's (or 0.22 Quads) of energy annually. Based on the greater energy efficiency of the fuel cell/battery power source as demonstrated in the Phase I laboratory tests, the potential energy savings with fuel cell powered buses is estimated to be up to 100 trillion Btu's (or 0.1 Quads) annually. More detailed market studies are scheduled to be initiated in FY 1991.

State and Local Assistance Program Grants

Question: The Administration continues to argue this year that the States have ample Petroleum Violation Escrow monies available to fund the State and Local grants, as well as cover much of the Low Income Home Energy Assistance Program (LIHEAP). Is there any indication that the distribution of oil overcharge monies to the States bears any correlation to the States' needs under the present State Grants formulae?

Answer: The distribution of oil overcharge funds is based on oil usage patterns during the period of the overcharges, and so is not directly similar to the allocation formulae for the State and local grants programs.

Question: Please provide for the record a table indicating how $200,000,000 would be distributed by State under the oil overcharge formulae (pro-rata share of funds distributed to date) and provide, beside that column, another column which compares how much money each State would receive under $200,000,000 distribution according to normal State and Local Grants program ratio and formulae? In a third column, please display the result of dividing column one by column two.

Answer: The attached table provides the requested information.

Question: Please provide a map of the United States and within each State include a circle with a "+" or "-" inside to indicate whether the State is a "winner" or "loser" based on the result of the ratio of funds distributed under the oil overcharge formulae to the funds distributed according to normal State and Local Grants program ratio and formulae for each State.

Answer: The attached map of the United States provides the requested information.

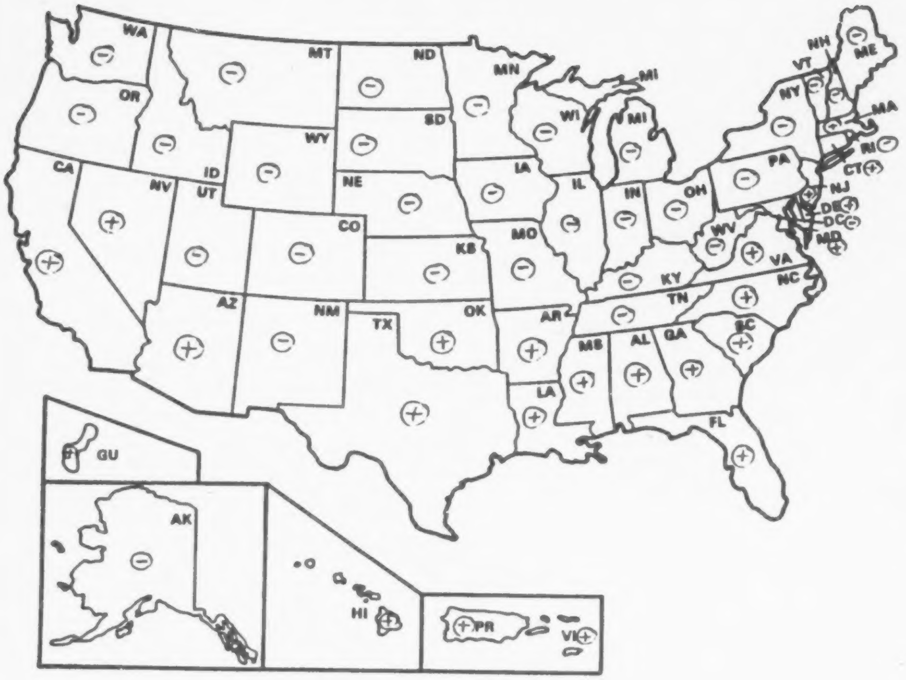
Question: If we did as the Administration suggests and told the States to use their unexpended Petroleum Violation Escrow monies to fund the State and Local Grants program, such as Low-Income Weatherization, and also to fund the Low Income Home Energy Assistance Program, every single State in New England would fall short of the Escrow funds needed to match their 1990 grant program needs. Why is the Administration proposing a funding mechanism which has such obvious regional inequities?

Answer: The Administration is not proposing that the oil overcharge funds will be the only support for the Low-Income Home Energy Assistance Program (LIHEAP). The President's budget request for FY 1991 includes $1.05 billion for LIHEAP. Although the distribution formulae for oil overcharge funds and the DOE State Grants funds are not similar, all States (including those in New England) have sufficient unexpended oil overcharge funds to match their normal DOE support for these programs for over one year.

COMPARATIVE TABLE

STATE ALLOCATIONS UNDER PVE DISTRIBUTION FORMULA AND OSLAP GRANT DISTRIBUTION FORMULA

STATE	FUNDS RECEIVED PVE FORMULA	FUNDS RECEIVED SLAP GRANT FORMULA	RATIO
ALABAMA	$3,069,025	$2,145,000	1.43
ALASKA	$773,852	$1,641,000	0.47
AMERICAN SAMOA	$35,621	$161,000	0.22
ARIZONA	$2,051,529	$1,087,000	1.89
ARKANSAS	$2,545,160	$1,845,000	1.38
CALIFORNIA	$18,308,865	$6,305,000	2.90
COLORADO	$2,150,466	$4,177,000	0.51
CONNECTICUT	$3,396,518	$2,827,000	1.20
DELAWARE	$949,555	$740,000	1.28
DISTRICT OF COLUMBIA	$477,756	$828,000	0.58
FLORIDA	$9,240,615	$1,766,000	5.23
GEORGIA	$4,453,782	$2,462,000	1.81
GUAM	$294,738	$170,000	1.73
HAWAII	$1,374,175	$421,000	3.26
IDAHO	$820,836	$1,836,000	0.45
ILLINOIS	$9,186,258	$11,687,000	0.79
INDIANA	$4,926,455	$5,710,000	0.86
IOWA	$2,605,961	$4,495,000	0.58
KANSAS	$2,242,047	$2,313,000	0.97
KENTUCKY	$2,563,713	$3,834,000	0.67
LOUISIANA	$4,757,213	$1,463,000	3.25
MAINE	$1,470,263	$2,955,000	0.50
MARYLAND	$3,580,981	$2,784,000	1.29
MASSACHUSETTS	$6,846,556	$6,290,000	1.09
MICHIGAN	$6,814,549	$12,285,000	0.55
MINNESOTA	$3,470,577	$8,863,000	0.39
MISSISSIPPI	$2,731,096	$1,435,000	1.90
MISSOURI	$3,948,945	$5,085,000	0.78
MONTANA	$905,242	$2,097,000	0.43
NEBRASKA	$1,474,856	$2,417,000	0.61
NEVADA	$810,115	$733,000	1.11
NEW HAMPSHIRE	$932,137	$1,654,000	0.56
NEW JERSEY	$7,382,965	$5,663,000	1.30
NEW MEXICO	$1,310,128	$1,583,000	0.83
NEW YORK	$15,487,005	$18,909,000	0.82
NORTHERN MARIANAS	$18,425	$160,000	0.12
NORTH CAROLINA	$4,488,941	$3,506,000	1.28
NORTH DAKOTA	$733,061	$2,221,000	0.33
OHIO	$7,515,368	$10,934,000	0.69
OKLAHOMA	$2,470,132	$2,183,000	1.13
OREGON	$1,982,491	$2,577,000	0.77
PENNSYLVANIA	$9,312,117	$12,558,000	0.74
PUERTO RICO	$1,905,311	$488,000	3.90
RHODE ISLAND	$792,975	$1,296,000	0.61
SOUTH CAROLINA	$2,384,400	$1,530,000	1.56
SOUTH DAKOTA	$715,124	$2,003,000	0.36
TENNESSEE	$3,236,074	$3,677,000	0.88
TEXAS	$14,755,254	$4,173,000	3.54
TRUST TERRITORIES	0	$76,000	0.00
UTAH	$1,179,905	$1,867,000	0.63
VERMONT	$478,677	$1,363,000	0.35
VIRGIN ISLANDS	$925,173	$171,000	5.41
VIRGINIA	$5,132,923	$3,622,000	1.42
WASHINGTON	$3,054,255	$3,957,000	0.77
WEST VIRGINIA	$1,195,295	$2,644,000	0.45
WISCONSIN	$3,518,969	$7,302,000	0.48
WYOMING	$815,577	$1,026,000	0.79
TOTAL	$200,000,000	$200,000,000	



Question: Let's examine the argument that States have adequate Petroleum Violation funds to continue these grant programs on their own. Is the Administration aware that a total of 22 States have less unexpended escrow balances than their FY 1990 grant program levels?

Answer: The Administration has requested $1.05 billion for the States in FY 1991 for LIHEAP. Without including LIHEAP in the calculations, all States have unexpended balances in excess of their FY 1990 grant program funding levels.

Question: Furthermore, what is the rationale for proposing that States de-obligate escrow monies, as nearly all would have to do, to cover their FY 1991 grant program needs at the FY 1990 level?

Answer: When LIHEAP, for which the Administration is proposing separate funds in FY 1991, is excluded from the calculations, all but 10 States have unapproved balances in excess of their FY 1990 grant program funding levels. In addition it should be remembered that, in many cases, funds approved have not yet been expended. DOE is not proposing that any State de-obligate committed oil overcharge funds; by continuing to spend those funds the State will be providing continued support for the conservation programs it has designed to meet its specific needs.

Question: Aren't the oil overcharge distributions to the States simply restitution for overcharges which occurred during the 1970's?

Answer: Yes, and the court settlements have established these programs as the vehicle to provide indirect restitution to injured consumers.

Question: Please indicate for the Subcommittee which States, if any, have enough uncommitted overcharge funds to fully match their FY 1989 combined federal funding under the LIHEAP and State Grants Programs.

Answer: Even without the funds the Administration has requested for LIHEAP in FY 1991, the following 17 States would have sufficient uncommitted oil overcharge funds to match their combined FY 1989 funding for LIHEAP and the State grants:

Delaware
Alabama
North Carolina
Puerto Rico
South Carolina
Virgin Islands
Arkansas
Nevada
Idaho
Louisiana
Nebraska
Wyoming
Arizona
California
Texas
Hawaii
Florida

Question: How will these States that have fully committed all of their overcharge receipts fund these State and Local Grant programs as you propose?

Answer: When LIHEAP is excluded, all States have sufficient funds. In addition, DOE's Office of State and Local Assistance Programs has been working with the States for the past 6 years to help them identify and access alternative sources of funding for energy conservation activities. DOE has demonstrated innovative techniques such as shared savings arrangements for increasing private sector support.

FY 1991 Initiatives

Question: Please provide a listing of all new initiatives in the FY 1991 budget and their requested funding levels. A new initiative is any program, project, or activity which was not specifically identified in the FY 1990 budget justifications, or specifically added in the Conference Report.

Answer: Within the request for CE's Office of State and Local Assistance Programs, DOE is requesting $15 million in grants to encourage innovative approaches to weatherization activities, along with attracting non-federal resources to the program.

Question: Please provide a listing of all new initiatives in the FY 1991 budget and their requested funding levels. A new initiative is any program, project, or activity which was not specifically identified in the FY 1990 budget justifications, or specifically added in the Conference Report.

Answer: The following new initiatives have been requested in the FY 1991 Conservation research and development budget request:

($ in Thousands)

Buildings and Community Systems

- Planning & development of building instrumentation and energy monitoring project to perform building system integration field testing in cooperation with industry. ($2000)
- Initiate demonstration projects in at least five climatic regions to assess the impact of building standards and guidelines (Required by P.L. 94-385) ($1800)
- Encourage State and local government to incorporate voluntary DOE standards in their building code. ($3000)
- Expand use of integrated resource planning in order to consider all fuel sources in electricity planning. ($3000)
- Conduct a campaign to accelerate the adoption of available (near-term) energy conservation technologies. ($1500)
- Expand Federal Energy Management Program activities to focus on "relighting" Federal facilities. ($1000)

Industrial Energy Conservation

- Initiate Phase II of foundry industry projects. These projects received no funding in FY 1990, but Phase I was funded with FY 1989 appropriations. ($295)

- Initiate Phase II of refractory projects. These projects received no funding in FY 1990, but Phase I was funded with FY 1989 appropriations. ($712)

- Initiate new sensor and control projects
    - on-line viscosity sensor for pulp mill bleaching ($200)
    - on-line food processing sensors ($237)
    - on-line sensors for commercial magnesium cells ($100)
    - on-line process control system for Kraft pulping digester control ($200)

- Recuperators. Investigate new strength limiting flaw detection techniques. ($250) This is not a new area of work, but it was not funded during FY 1989 or 1990.

- Initiate new separations projects
    - membrane system to sweeten natural gas. ($100) Laboratory work on these membranes was funded prior to FY 1989
    - field test solid-on-solid processes for fabric printing. ($100) Laboratory R&D in this area was funded prior to FY 1989.
    - food drying processes. ($100) Initial funding was provided from FY 1989 appropriations.
    - Testing of continuous chromotography unit. ($150) This will complete R&D funded with appropriations prior to FY 1989.
    - enzymatic production of chemicals to displace feedstocks derived from petroleum. ($200)

Transportation

- Although there are no new major initiatives contained in the DOE FY 1991 submission for Transportation, the research and development activities in the alternative fuels utilization area have been expanded to address environmental and emissions impacts, as well as modeling the atmospheric chemistry and fate of emissions. These activities will include the development of an alternative fuels data center and establishment of a high altitude emissions testing capability. ($3,000)

Multi-Sector

- Initiate new materials projects:
    - inorganic polymers ($100)
    - integrated coatings technology ($400)

- Initiate project in carbon dioxide/methane removal. ($300)

Project Level Funding

Question: Provide FY 1989 obligations, FT 1990 estimate, and the FY 1991 request for each discrete project identified in the key activity tables of the budget justification.

Answer: Project level funding tables that provide the requested information are attached.

Question: Also, separately provide the FY 1989 unobligated balance for the same level of detail.

Answer: The project level funding tables referenced above also provide this information.

BUILDINGS AND COMMUNITY SYSTEMS

Project Level Funding
($000)

Building Systems

Key Activity	FY 1989	FY 1990	FY 1991
Building Materials			
Industry Advisory Panel	4	0	0
Assessment of Composite Materials	80	0	0
Economic Assessment Methodology	90	10	0
Insulation Fact Sheet and ZIP Program Development	0	80	30
Technology Transfer	0	0	70
Subtotals	$174	$90	$100
Alternatives to Insulation Containing CFC's	100	500	200
Variable/Switchable R-Value & Emittance Materials and Insulating Concrete	50	100	100
Evacuated Powder-Filled Panels	100	0	0
Vacuum Insulation	185	222	300
Subtotals	$435	$822	$600
Test Procedures and Modeling for Moist Insulation, Reflective Insulation, and Selective Films	258	200	300
Subtotals	$258	$200	$300
Building Materials Subtotals	$867	$1,112	$1,000
Building Subsystems			
Walls and Foundations Research			
Validation of Models and Calculation Methods	251	140	90
Testing of Dynamic Thermal and Moisture Transport in Complex Wall Constructions	0	0	80
Subtotals	$251	$140	$170
Thermal Anomalies Design Guide	70	0	0
Moisture Mitigation Guidelines	100	91	100
Assessment of Advanced Composite Wall Technology	0	40	30
Subtotals	$170	$131	$130

Foundations Research	279	223	348
Subtotals	$279	$223	$348
	------	------	------
Walls and Foundations Subtotals	$700	$494	$648
Roof Research and Diagnostics			
Operate Roof Research Center	50	175	200
Subtotals	$50	$175	$200
Moisture in Roofs and Re-Roofing Issues	150	75	105
Lightweight Concrete and Spray Polyurethane Foam Roof Research	60	25	0
Radiant Barriers and Loose-Fill Insulation in Attics	75	50	100
Performance of Non-CFC Foams in Roofs	75	93	100
Subtotals	$360	$243	$305
Test Procedures, Inspection Standards, and Moisture Measurement Technology	190	76	50
Subtotals	$190	$76	$50
	------	------	------
Roof Research and Diagnostics Subtotals	$600	$494	$555
Windows Research			
Low-E Coatings Research	100	140	100
Superwindow Technology	148	160	140
Long Term Window Performance Research	137	0	80
Advanced Commercial Building Envelope Research	0	120	80
Subtotals	$385	$420	$400
Support to Industry Consensus Performance Standard and Labeling Program	300	600	300
ASHRAE Window Performance Evaluation Procedure	300	120	0
DOE/ASHRAE Solar Heat Gain Methodology Development	50	30	100
Mobile Window Thermal Test Prog.	150	150	100
Basic Daylighting Research	105	0	0
Subtotals	$905	$900	$500
Commercial Building Fenestration Design Tools	210	300	300
Residential Bldg Design Tools	0	160	187
Subtotals	$210	$460	$487
	------	------	------
Windows Research Subtotals	$1,500	$1,780	$1,387

Daylighting Research			
Electrochromic Films Research	894	1,000	900
Holographic Coatings Research	235	235	150
Non Mechanical Core Lighting Tracking Systems	306	300	200
Core and Atrium Lighting Research	300	300	150
Subtotals	$1,735	$1,835	$1,400
Indoor Air Quality, Infiltration, and Ventilation (IAQIV)			
Radon Research	580	0	0
Soil Gas Entry Research	0	64	80
Volatile Organic Compounds Research	0	200	150
Polar Organics Measurement Research	0	0	170
Subtotals	$580	$264	$400
Commercial Building Ventilation Systems Research	253	180	150
Large Building IAQ Studies	0	490	350
Subtotals	$253	$670	$500
IAQ, Infiltration, and Ventilation Measurement in Large Office Bldgs	550	0	0
Develop Industry Consortium on Effective Ventilation Research	0	80	80
Voluntary Consensus IAQIV Standards	0	360	300
Interagency Coordination	10	10	10
Air Leakage and Infiltration Model Development	0	0	200
Indoor Air Pollution Macromodeling	0	0	110
Subtotals	$560	$450	$700
IAQIV Subtotals	$1,393	$1,384	$1,600
Building Subsystems Subtotals	$5,928	$5,987	$5,590
Building Subsystems Interaction			
Commercial Bldg. Integration			
Advanced Energy Design and Operation Technologies	150	392	125
Building Energy Targets	350	400	312
Lighting/HVAC Interactions	100	0	80
HVAC/Structure Integration	50	0	40
Building Instrumentation and Energy Monitoring Projects	0	0	2,000
Subtotals	$650	$792	$2,557
Industrialized Housing			
Production Technologies	210	225	248
Prototype Design	350	500	116
Testing and Monitoring	140	164	86
Advanced Housing Tech. Research	0	100	150
Subtotals	$700	$989	$600

Building Performance Simulation			
DOE-2 Maintenance	250	200	250
Advanced Performance Simulation	500	294	393
Subtotals	$750	$494	$643
Building Subsystems Interaction Subtotals	$2,100	$2,275	$3,800
Existing Buildings Research			
Audit and Monitoring	100	250	350
Retrofit Energy Saving Data	300	300	300
Testing Retrofit Technologies (Competitive Solicitation)	800*	100	100
Institutional and Financial Barriers Resolution	0	0	200
Handbooks and Fact Sheets	104	148	350
Existing Buildings Subtotals	$1,304	$798	$1,300
Standards and Guidelines			
Federal Residential Demonstration	253	334	200
Voluntary Residential Standards	53	234	1,000
Commercial Standards	394	224	800
Accelerated Guidelines and Standards	0	0	3,000
Standards and Guidelines Subtotals	$700	$792	$5,000
BUILDING SYSTEMS TOTALS	$10,899	$10,964	$16,690

Community Systems

Key Activity	FY 1989	FY 1990	FY 1991
District Heating and Cooling			
Advanced Fluids, Additives, Phase Change Materials	260	250	272
Ice Slurry, Cold Water and Components Technology	600	736	500
Innovative District Cooling Feasibility Assessments	-0-	900	-0-
Scranton's Mine Water and District Heating Renovation	200	230	-0-
District Heating and Cooling Subtotal	$1,060	$2,116	$772
Community Energy Systems			
Urban Consortium Energy Task Force	2,000*	1,978	-0-
Community Energy Systems Subtotal	$2,000	$1,978	$-0-
COMMUNITY SYSTEMS TOTALS	$3,060	$4,094	$772

* Includes $636 unobligated carryover to be spent in FY 1990.

* Includes $1960 unobligated carryover to be spent FY 1990.

Technology and Consumer Products

Key Activity	FY 1989	FY 1990	FY 1991
Thermally Activated Heat Pumps			
Absorption Technology	3,300	3,300	2,100
Stirling Engine Technology	1,628	1,632	1,200
Internal Combustion Engine Technology	1,200	1,200	800
Thermally Activated Heat Pumps Subtotals	$6,128	$6,132	$4,100
Advanced Refrigeration Systems			
Vapor Compression	1,300	887	1,374
Subtotals	$1,300	$887	$1,374
CFC Alternatives			
Preliminary Fluids Data Development	300	0	0
Supporting Research on Materials Compatibility	0	1,000	1,000
Systems and Equipment Compatibility Testing	0	1,475	2,200
Subtotals	$300	$2,475	$3,200
Solar Cooling and Dehumidification			
Polymeric Desiccant Materials Research	415	361	300
Solid Desiccant Materials Research	300	300	100
Open-cycle Cooling Systems	150	0	0
Analytical Modeling of Moisture Absorption/Desorption and Transport	400	350	0
Subtotals	$1,265	$1,011	$400
Advanced Refrigeration Subtotals	$2,865	$4,373	$4,974
Combustion and Thermal Distribution:			
Advanced Oil Heating Technology Research	750	989	0
Combustion and Thermal Distribution Subtotals	$750	$989	$0
Advanced Lighting			
Light Sources	1,900	1,700	1,200
Lighting Impacts and Applications	600	822	400
Subtotals	$2,500	$2,522	$1,600
TECHNOLOGY AND CONSUMER PRODUCTS TOTALS	$12,243	$14,016	$10,674

Technology Assessment and Transfer

Key Activity	FY 1989	FY 1990	FY 1991
Technical Evaluation, Analysis and Planning			
IEA Support	100	111	100
CADDET Support	0	0	100
Building Energy Accounting System	50	45	50
Annual Analysis Report	50	45	50
Multi-Year Planning	200	195	200
External Team Characterizing BCS Technologies	0	0	400
Environmental and International Benefit Assessment	0	0	200
Market Penetration Estimates	0	0	545
Building Energy Compilation and Analysis	200	0	280
	=======	======	======
Technical Evaluation, Analysis and Planning Subtotals	$600	$396	$1,925
Least-Cost Utility Planning (LCUP)/ Integrated Resource Planning			
LCUP Base Program	900	1,286	900
Integrated Resource Planning	0	0	900
Institutional and Regulatory Reform	0	0	600
Environmental Considerations	0	0	500
Demand Side Management Evaluation and Data	0	0	600
Training, Networking and Information Dissemination	0	0	400
	=======	=======	=======
Least Cost Utility Planning/ Integrated Resource Planning Subtotal	$900	$1,286	$3,900
Technology and Information Transfer			
Transfer Information, Improve System, Monitor Results	350	290	425
Workshops, Conferences, etc.	100	33	50
State of Art Reports	200	150	140
Teacher Institutes	0	120	110
	======	======	======
Technology and Information Transfer Subtotals	$650	$593	$725
Acceleration of Near-Term Technologies			
Identify and Assess Barriers	0	0	500
Uniform Home Rating Systems	0	0	200
Information Network	0	0	500

HUD Technical Assistance for Low-Income and Weatherization	0	0	300
	=======	=======	=======
Acceleration of Near-Term Technologies Subtotals:	$0	$0	$1500
TECHNOLOGY ASSESSMENT AND TRANSFER TOTAL	$2,150	$2,275	$8,050

Appliance Standards

Key Activity	FY 1989	FY 1990	FY 1991
Test Procedures and Consumer Education			
Test Procedures	700	692	750
	======	======	======
Test Procedures and Consumer Education Subtotals	$700	$692	$750
Appliance Standards Development			
Standards Development	$973	$1,088	$1,250
	======	=======	=======
Appliance Standards Development Subtotals	$973	$1,088	$1,250
APPLIANCE STANDARDS TOTALS	$1,673	$1,780	$2,000

Federal Energy Management Program

Key Activity	FY1989	FY1990	FY 1991
Federal Planning, Coordination, Reporting and Evaluation			
Planning, Coordination, Reporting and Evaluation Activity	335	331	435
Energy Efficiency Awards	65	65	65
	=======	======	======
Subtotals	$400	$395	$500
Program Technical Guidance and Assistance			
Guidance and Assistance Activity	600	791	1200
Whole Facility Energy Monitoring	0	0	790
Infrastructure Modernization	0	0	510
	======	======	======
Subtotals	$600	$791	$2500
FEDERAL ENERGY MANAGEMENT TOTALS	$1000	$1187	$3000

Program Direction

Key Activity	FY 1989	FY 1990	FY 1991
Program Direction	$3,370*	$3,449	$3,681
PROGRAM DIRECTION TOTALS	$3,370	$3,449	$3,681

*Includes $73 unobligated carryover to be spent in FY 1990.

Capital Equipment

Key Activity	FY 1989	FY 1990	FY 1991
Capital Equipment	$1,210	$1,003	$1,100
CAPITAL EQUIPMENT TOTALS	$1,210	$1,003	$1,100
BUILDINGS AND COMMUNITY SYSTEMS TOTALS	$35,605	$38,768	$45,967

INDUSTRIAL PROGRAMS

Project Level Funding
($000)

Waste Energy Reduction

Key Activity	FY1989	FY1990	FY1991
Improved Combustion Efficiency			
Oxygen-Enriched Combustion System	$ 167	$ --	$ --
Work Piece Temperature Analyzer	903	427	200
Advanced Radiant Combustion System	--	150	450
Ferrous Scrap Preheating System	--	149	--
Supercritical Wet Oxidation Combustion System	430	467	240
Advanced Glass Melting System	--	148	610
Subtotals	$1,500	$1,341	$1,500
Advanced Industrial Heat Pumps			
Heat Pump Pinch Analysis Engineering Prototype	$ 200	$ 506	$ 400
Magnetic Heat Pump Refrigerator	826	100 *	400
Adv Brayton Chemical Recovery	287	660	250
Absorption Chemical Heat Pump	237	350	300
Adv Prototype Chemical Heat Pump	--	501	550
Subtotals	$1,550	$2,117	$1,900

*In addition, 826 of Unobligated Carryover

Advanced High Temperature Recuperators			
Ceramic Fiber Composite Heat Exchanger	$ 622	$1,595	$ 800
Fiber Architecture for Ceramic Composites	327	--	100
Strength Limiting Flaws in Ceramics	420	--	--
Monolithic Nondestructive Evaluation Equipment	--	123	325

Strength Limiting Flaw Detection Techniques	--	--	250
Corrosion and Fouling Probes	351	521	125
Ceramic Composite Initiative Assessment	357	--	--
Ceramic Composite Initiative Studies	123	635	600
Subtotals	$2,200	$2,874	$2,200

Waste Energy Reduction

Key Activity	FY1989	FY1990	FY1991
Liquid Gaseous/Solid Waste Conversion			
Conversion of Food Processes - Cheese Whey to Ethanol	$ 210	$ 223	$ 20
Biotech for Industrial Wastewaters	402	600	360
Adhesives from Lignocellulose Waste	238	545	320
Waste Tires to Polymer Composites	--	417	200
Contaminant Control in Metal Scrap	440	804	700
Antimony Removal from Aluminum Scrap	220	100	20
Auto Shredder Residue to Marketable Materials	--	--	20
Factory Roofing Waste Recycling	--	100	20
Low Temperature Catalytic Gasifier	290	100	40
Mixed Waste Plastic to Higher Value Chemicals	--	--	100
Quantify Liquid & Solid Wastes through EADC Studies	--	95	--
Subtotals	$1,800	$2,984	$1,800
Utilization of Waste Stack Gas			
Silicon Monoxide Capture & Reuse	$ 431	$ 531	$ --
Hydrogen Sulfide Recovery by Microwaves	205	478	--
Ultraviolet Dual Coating Curing	664	45	600
Biotechnology Recovery Investigation	--	530	700
Quantify Gaseous Wastes through EADC Studies	--	48	--
Subtotals	$1,300	$1,632	$1,300
National Laboratory Support	$2,800	$1,908	$2,800
Waste Energy Reduction Totals	$11,150	$12,856	$11,500

Industrial Process Efficiency

Key Activity	FY1989	FY1990	FY1991
Process Electrolysis			
Cerium Oxide Coated Cermets Testing	$ 128	$ 475	$ --
Inert Electrode Materials Testing & Dev	590	250	--
Advanced Cell Hydrodynamics Modeling	120	--	--
Low Temperature Cell - High Surface Area Inert Anodes	580	1,014	--
Cermet Anode Materials Pilot Cell	150	--	1,000
Fabrication Methods for Inert Anodes	--	100	100
Composite Cathode Material Development	232	--	--

Current Efficiency Studies for New Anode/Cathode Materials	--	130	--
New Projects Solicitation	--	139	400
Subtotals	$1,800	$2,108	$1,500
Materials Processing			
Foundry Industry R&D	$ 156	$ -- *	$ 295
Refractories Research	58	--	712
Rapid Glass Refiner	292	80	--
Arc-Shattering Concept for Comminution Technologies	125	347	43
Advanced Comminution Technologies	25	--	250
Removal of Copper from Scrap	179	--	--
Corrosion-Resistant Ordered Iron-Aluminide Alloys Development	55	--	--
Thin Strip Casting of Steel	110	--	--
Direct Steelmaking	-- **	9,254	6,000
Spray Casting Process	-- **	3,116	1,200
Superplastic Steel Processing	-- **	706	--
New Metal Initiative Projects	--	3,824	--
Metals Initiative (TBD)	--	--	1,400
Subtotals	$1,000	$17,327	$9,900

* In addition, 245 of Unobligated Carryover
** Activities carried out with prior-year funds

Industrial Process Efficiency

Key Activity	FY1989	FY1990	FY1991
Sensors and Controls			
Aluminum Reduction Cell Sensors	$ 250	$ 310	$ 250
On-Line Chemical Composition Analyzer	350	350	--
Testing of Lasentec Consistency Sensor	100	--	50
Pulp Consistency Sensor	200	--	--
Particle-Size Concentration Sensor	350	50	--
Prototype Lignin Concentration Sensor	260	270 *	100
On-Line Viscosity Sensor	--	--	200
Advanced On-Line Process Control System	--	--	200
Soil Chemical Sensor	335	--	--
Agriculture Process Sensor	36	220	280
Advanced Moisture Sensor	156	300	--
On-Machine Measurement of Paper Properties	250	282	118
Glass Industry Sensor	75	--	--
Sonic Temperature Sensor for Food Processing	90	420	315
Nuclear Magnetic Resonance (NMR) Crop Ripeness Sensor	83	200	250
On-Line Sensors in Food Processing Industry	--	--	237
Thin Film Device for Process Measurement	50	185	--
On-Line Sensors for Commercial Magnesium Cells	--	--	100
Low Energy Separations Program	147	--	--
Supercritical Water Oxidation Study	50	-- **	--
Misc Sensors and Controls	118	--	--
Subtotals	$2,900	$2,587	$2,100

* In addition, 260 of Unobligated Carryover
** In addition, 50 of Unobligated Carryover

Industrial Process Efficiency

Key Activity	FY1989	FY1990	FY1991
Separations Research			
Membrane Separation of Organic Liquids	$ 100	$ 100	$ --
Conventional/Hybrid Membrane Processes	26	100	250
Membrane Fouling Reduction (Piezoelectric)	200	200	200
Membrane Fouling Reduction (Fluorination)	76	--	--
Active Transport Membrane Development	365	300	320
Mono-layer Films to Reduce Membrane Fouling	--	284	300
High Temperature Phosphazene Membranes	300	290	310
High Temperature Catalytic Reactors and Processes	380	750	700
Ceramic Membrane Development	--	150	--
Membrane System to Sweeten Natural Gas	--	--	100
Pulsed Combustion Process for Black Liquor Gasification	480	-- *	485
Black Liquor Properties Characterization	300	350	350
Fundamentals of Black Liquor Combustion	110	400	300
Black Liquor Delivery Systems	300	350	350
Sulfur-Free Selective Pulping Process	350	425	--
Superheated Steam Drying Processes	--	515	185
Electroacoustic Dewatering Press for Food Streams	--	200	--
Solid-on-Solid Processes in Textiles Mfg	--	--	100
Fundamentals of Food Drying	28	--	100
Adv Water Removal for Paper Industry	300	250	100
Freeze Concentration in the Dairy Industry	200	200	200
Corrosion-Resistant Ordered Iron Aluminide Alloys	135	110	--
High Performance Liquid Chromatography Separations Process	--	--	150
High Capacity Contacting Device for Improved Distillations	--	200	--
Enzymatic Production of Chemicals using Petroleum-based Feedstocks	--	--	200
Subtotals	$3,650	$5,174	$4,700
* In addition 930 of Unobligated Carryover			
Industrial Process Efficiency Totals	$9,350	$27,196	$18,200

Industrial Cogeneration

Key Activity	FY1989	FY1990	FY1991
Advanced Topping Cycle Systems			
Coal-Fired Brayton Testing	$1,201	$1,007	$ --
High Performance Steam Development	2,014	2,364	2,300
Gravel Bed Combustor	200	194	200
Oxygen-Enriched Diesel Testing	385	405	300
Gas Turbine Ceramic Components	--	183	700
Power Wheeling Effect on Prime Movers	--	125	300
Subtotals	$3,800	$4,278	$3,800
Thermal to Electrical Energy Conversion			
Sodium Heat Engine, 1 kw Unit	$ 800	$ 795	$ 300
Industrial Cogeneration Totals	$4,600	$5,073	$4,100

Implementation and Deployment

Key Activity	FY1989	FY1990	FY1991
Technical Evaluation, Analysis and Planning	$ 962	$ 950	$ 900
Energy Analysis and Diagnostic Centers	1,500	1,811*	2,500
Technology and Information Transfer	627	799	800
Implementation and Deployment Totals	$3,089	$3,560	$4,200

*In addition, 500 is to be reprogrammed for this activity

TRANSPORTATION

Project Level Funding
($000)

Vehicle Propulsion R&D

Key Activity	FY 1989	FY 1990	FY 1991
Automotive Gas Turbine:			
Advanced Turbine Technology Applications	10,200	10,635	6,300
Supporting Research and Technology	591	525	500
Project Management and Support	599	708	600
Subtotals	$11,390	$11,868	$ 7,400
Automotive Stirling Engine:			
Stirling Engine Technology Development	990	0	0
Subtotals	$ 990	$ 0	$ 0
Heavy Duty Transport:			
Advanced In-Cylinder & Applied Tribology	2,646	3,220	2,400
Thick Thermal Barrier Coatings Development	210	302	300
High Temperature Synthetic Liquid Lube	114	50	200
Waste Heat Utilization	104	80	50
Diesel Engine Components--Alternative Fuels	120	276	176
Advanced Combustion/Emission Control	35	84	70
NOx Aftertreatment (RAPRENOX)	125 1/	125	125
Friction & Wear Ceramic Valve Train Wear Points in Diesel Engine	0	50	50
Project Management and Support	589	738	629
Subtotals	$ 3,943	$ 4,925	$ 4,000

Vehicle Propulsion R&D

Key Activity	FY 1989	FY 1990	FY 1991
CFC Analysis and Research:			
Alternate Refrigerants for Auto Air Conditioners	0	257	0
Thin-Film Coatings for Automotive Glass	0	215	0
Alternative Automotive Air Conditioning Cycles	0	120	0
Subtotals	$ 0	$ 592	$ 0
TOTALS	$16,323	$17,385	$11,400

1/ Procurement delays caused these funds to be carried into FY 1990 as an unobligated FY 1989 balance. The funds will be applied to the RAPRENOx project in FY 1990.

Alternative Fuels Utilization

Key Activity	FY 1989	FY 1990	FY 1991
Alcohol/Gaseous Fuels:			
Federal Methanol Fleet	300	300	200
Hawaii Methanol Program	175	300	300
Dedicated CNG and MEOH Vehicle Assessment	0	50	150
Thermal and Catalytic Emissions Reduction	0	100	250
Flex-Fuel Diesel Investigation	0	130	200
Combustion Enhancement for Methanol Diesels	(150) 1/	100	0
Methanol Diesel Ignition Investigation	(125) 1/	0	0
Cold Start for Methanol Spark Ignition Engines	0	0	200
Oxygen Enrichment Technology Development	0	0	200
Alternative Fuels Catalyst R&D	0	0	200
High Altitude Emissions Profiles	0	0	250
Quantify Total Emissions Profiles for Alternative Fuels	0	0	250
Confirm Alternative Fuels Atmospheric Decomposition Mechanisms	0	0	500
Conduct High Altitude Tests for Model Inputs	0	200	100
Refine Atmospheric Models with Alternative Fuels Inputs	0	0	300
Establish and Operate Alternative Fuels Data Center	0	150	600
Program Management	(225) 1/	350	400
Subtotals	$ 475	$ 1,680	$ 4,100

1/ Projects funded under Synthetic Fuels

Synthetic Fuels:			
Synthetic Test Fuels Facility at Southwest Research Institute	250	250	250
Emissions and Performance Investigations	230	0	0
Enhanced Combustion of Syncrudes	175	50	50
Fuel Composition Tailoring	0	50	150
Clean Diesel Fuels from Coal	0	0	50
Fuels Impacts on Ceramic Materials	167	100	150
Program Management and IEA	350	130	250
Projects from Alcohols/Gaseous Fuels	500 2/	0	0
Subtotals	$ 1,672	$ 580	$ 900

2/ Projects described under Alcohol/ Gaseous Fuels

Alternative Motor Fuels Demonstration:			
Initiate GSA Agreement for LD Vehicle Procurement	0	600	1,000
Design Data Collection System	0	50	0
Conduct Site Selection and Data Collection for LD Vehicles	0	285	400
Establish Cooperative Efforts with State & Local Authorities	0	250	200
Subtotals	$ 0	$ 1,185	$ 1,600
Initiate Procurement for HD Demonstrations	0	600	1,400
Design Data Collection System	0	75	0
Select Sites and Conduct Data Collection for HD Vehicles	0	400	1,500
Establish a Transportable Emissions Test Facility	0	1,200	0
Subtotals	$ 0	$ 2,275	$ 2,900
Initiate UMTA Agreement for Bus Demonstrations	0	400	600
Design Data Collection System	0	50	0
Select Sites and Conduct Data Collection for Buses	0	240	1,000
Subtotals	$ 0	$ 690	$ 1,600
Support Interagency Commission and Alternative Fuels Council	0	100	100
Conduct AMFA Special Studies	0	200	300
Subtotals	$ 0	$ 300	$ 400
TOTALS	$ 2,147	$ 6,710	$11,500

$50,000 of unobligated FY 1989 funds will be applied to the Interagency Agreement with General Services Administration for the procurement of light duty vehicles under the Alternative Motor Fuels Demonstration.

Electric and Hybrid Vehicle R&D

Key Activity	FY 1989	FY 1990	FY 1991
Electric Vehicle Battery R&D:			
Sodium-Sulfur	1,850	1,300	1,600
Zinc-Bromine	1,000	990	1,000
Lithium-Metal Sulfide	975	965	1,000
Nickel-Iron	750	755	0
Nickel-Cadmium	242	0	0
Iron-Air	800	800	0
Flow-by Lead Acid	800	750	0
Sodium-Metal Chloride	0	550	0
Zinc-Air	0	400	0
Nickel-Metal Hydride	0	341	0
Advanced Lead-Acid	0	300	0
Ultracapacitor	0	286	0
Tubular Lead-Acid	0	300	0
Battery Modeling	0	150	0
Subtotals	$ 6,417	$ 7,887	$ 3,600
Electric Vehicle Propulsion System:			
Single-Shaft a.c. Propulsion Technology	850	2,397	2,500
Dual-Shaft a.c. Propulsion Technology	640	0	0
Fuel Cell Testbed Bus	1,975	1,966	2,000
Advanced Fuel Cell Technology	600 1/	1,650	0
Subtotals	$ 4,065	$ 6,013	$ 4,500
Test and Evaluation:			
In-Vehicle and Dynamometer Testing	1,896	1,706	2,000
Site Operator Support	735	1,360	1,000
Subtotals	$ 2,631	$ 3,066	$ 3,000
National Laboratory Management Support:	$ 720	$ 711	$ 700
TOTALS	$13,833	$17,677	$11,800

Electric and Hybrid Vehicle R&D

1/ Procurement delays caused $357,418 of funds to be carried into FY 1990 as an unobligated FY 1989 balance. The funds will be applied to the PEM fuel cell project in FY 1990.

Technology Assessment and Transfer

Key Activity	FY 1989	FY 1990	FY 1991
Technology and Information Transfer:			
Publication of the Gas Mileage Guide	693	692	0
Heat Engine Technology Evaluations	500	437	525
Conferences and Workshops	130	125	150

Assessments of Technology Options	400	400	500
SAE Student Competitions	0	100	100
International Agreements	125	125	125
Subtotals	$ 1,848	$ 1,879	$ 1,400
Technical Evaluation, Analysis and Planning:			
Transportation Energy Data Book	100	100	100
MPG and Market Shares Report	100	100	100
Transportation Projections	196	196	200
Subtotals	$ 396	$ 396	$ 400
TOTALS	$ 2,244	$ 2,275	$ 1,800

Advanced Materials Development

Key Activity	FY 1989	FY 1990	FY 1991
Materials and Processing:			
Ceramic Powder Synthesis	125	620	134
Advanced Processing and NDE	2,980	2,457	1,311
New Ceramic Processes	615	1,732	2,180
Ceramic Composites	1,887	1,903	1,967
Ceramic Coatings	1,221	762	732
Ceramic Joints	575	1,077	526
Microwave Sintering	300	300	300
Microstructure Toughening	350	350	350
Whisker Development	300	200	0
Subtotals	$ 8,353	$ 9,401	$ 7,500
Design Methodology:			
Wear and Friction	229	240	50
Advanced Statistics	191	50	50
Fracture Mechanics	80	100	30
Subtotals	$ 500	$ 390	$ 130
Database and Life Prediction:			
Life Prediction	554	435	4,535
Property Measurements	1,605	1,836	485
Nondestructive Evaluation	1,915	931	250
Microstructure Analysis	426	343	0
Power Characterization	400	400	400
Ceramic Properties Database	500	400	400
Tensile Strength Development	500	300	300
Fracture Behavior Investigation	200	200	0
Subtotals	$ 6,100	$ 4,845	$ 6,370
TOTALS	$14,953	$14,636	$14,000

High Temperature Materials Laboratory

Key Activity	FY 1989	FY 1990	FY 1991
High Temperature Materials Laboratory:	$ 2,000	$ 2,204	$ 2,800

Capital Equipment

Advanced Materials Development	550	689	500
Alternative Fuels Utilization	0	0	500
Electric Vehicle Test and Evaluation	0	300	0
High Temperature Materials Laboratory	0	728	0
TOTALS	$ 550	$ 1,717	$ 1,000

Program Direction

Program Direction:	$ 2,280[1]	$ 2,284	$ 2,300

---

[1] $171,753 of unobligated FY 1989 funds will be applied to salaries and benefits in FY 1990.

MULTI-SECTOR

Project Funding
($000)

Energy Conversion and Utilization Technologies (ECUT)

Key Activity	FY 1989	FY 1990	FY 1991
Combustion:			
Lean Homogeneous Charge Combustion Processes	2,441	1,073	1,000
Stratified Charge Combustion Processes	0	1,500	1,430
Autoignition/Chemical Kinetics	418	762	570
Diesel Combustion/Emission Processes	1,206*	1,200	1,100
Alternative Fuels Combustion Processes	0	100	100
Spray Dynamics/Combustion Processes	600	750	600
Pulse Combustion Processes	600	450	500
Subtotals:	5,265*	5,835	5,300

* Includes funding (125) carried into FY 1990 for research on removal of nitrogen oxides via the RAPRENOx process.

Thermal Sciences:			
Heat and Mass Transfer Enhancement Mechanisms	380	350	300
Fouling Mechanisms	300	300	300
Multi-Phase Flow/Heat Transfer	300	350	300
Energy Conversion Processes	425	400	550

Energy Conversion Systems Modeling	584	530	600
Working Media Research	200	100	150
Subtotals:	2,189	2,030	2,200
Materials:			
High Temperature Superconducting (HTSC) Materials Assessment	150	0	0
Proof of Concept of HTSC Components	580	1,200	1,100
HTSC Materials Development	660	0	0
Magnetic Field Processing of Materials	0	200	300
Ordered Intermetallic Alloy (OIA) Technology Base	950	1,300	1,200
Structural Ceramics and Composites	300	100	0
OIA Ductility and Failure	1,220	1,400	1,300
Ultra-Crack-Resistant Ceramics	0	300	0
Plastics Recycling	570	600	500
Bio-Based Plastics (from Natural Resins)	350	600	300
Novel Polymer Systems	0	0	100
Corrosion-Resistant OIA's	270	270	200
Electrodes for Refining Aluminum	160	230	0
Integrated Coatings Technology	0	0	400
Ceramic Insulation Without CFC's	600	460	600
Materials Processing by Design	380	500	100
Microwave Processing of Ceramics	700	1,200	800
Chemical Vapor Deposition of Ceramics	850	800	200
Electrochemical Synthesis of Materials	250	500	200
Proton Exchange Membrane	0	500	0
Novel Surface Hardening and Coating	20	300	200
Waste Minimization in Materials Processing	0	300	300
Integrated Sensors and Processing	320	857	600
Subtotals:	8,330	11,617	8,400
Catalysis/Biocatalysis:			
Novel Bioreactor Concepts	1,576	0	0
Non-Aqueous Solvents in Novel Bioreactors	1,800	1,200	1,000
Biological Processing of Waste Materials	0	100	100
Computer Design and Analysis of Bioprocesses	0	200	200
Molecular Modeling	500	1,655	1,700
Designed Microorganisms	50	300	300
Separations: Bio-Recovery of Phosphorous from Low Grade Ore	50	0	0
Separations: Product Recovery from Dilute Aqueous Solutions	0	100	100
Separations: Bio-Recovery of Phosphates from Low Grade Ore	0	250	200
Carbon Dioxide/Methane Removal	0	50	300
Innovative Chemical Processing	0	100	100
Subtotals:	3,976	3,955	4,000
Tribology:			
Modeling for Design Tools	50	50	40
Reduced Diesel Engine Particulates from Engine Lubricating Oil	0	200	150
Friction and Wear Measurements of Ceramic Materials	650	550	510
Improved Organic Lubricants	133	125	175

Ion Beam Techniques for Reduced Friction and Wear	1,100	1,000	1,050
Characterization of Tribomaterials	50	50	75
Emissions Control for Lubricants and Components	200	192	200
Friction and Wear of Ceramics for High Temperature Engines	750	750	750
Lube Delivery Systems	50	50	50
Subtotals:	2,983	2,967	3,000
ECUT TOTAL:	22,743*	26,404	22,900

Conservation Program International Research Monitoring (IRM)

Key Activity	FY 1989	FY 1990	FY 1991
Foreign Technology Monitoring, Analysis, and Assessment	150	160	180
Foreign Research Organization and Policy	10	62	70
International R&D Topical Studies	40	75	150
IRM TOTAL:	200	297	400

Conservation Program Analysis and Planning

Key Activity	FY 1989	FY 1990	FY 1991
Conservation Program Analysis and Planning TOTAL:	400	297	500

Inventions and Innovation Programs

Key Activity	FY 1989	FY 1990	FY 1991
Review and Evaluation of Inventions	1,575	1,600	1,600
National Innovation Workshops	125	150	150
Commercialization Planning Workshops	150	200	175
Inventor Assistance	2,750**	2,610	2,625
Innovative Concepts Program	250	335	250
Inventions and Innovation TOTAL:	4,850**	4,895	4,800

** Includes funding for inventor assistance (1,174) carried into FY 1990.

National Appropriate Technology Assistance Service

Key Activity	FY 1989	FY 1990	FY 1991
National Appropriate Technology Assistance Service TOTAL:	1,400***	1,385	1,400

*** Includes funding (123) carried into FY 1990.

Technology Assessment and Transfer

Key Activity	FY 1989	FY 1990	FY 1991
Technical and Management Support/ ECUT Systems Analysis	300	295	362
Monitoring and Evaluation of Inventions Commercialization	150	150	150
ECUT Bulletin	32	30	0
State Inventors Initiative	450	420	450
Innovative Concepts Fair and Outreach	0	53	20
Technology Transfer TOTAL:	932	948	982

Capital Equipment

Key Activity	FY 1989	FY 1990	FY 1991
ECUT Capital Equipment TOTAL:	550	593	300

Program Direction

Key Activity	FY 1989	FY 1990	FY 1991
ECUT and Inventions Program Direction TOTAL:	1,175	1,193	1,175
MULTI-SECTOR TOTAL:	32,250	36,012	32,457

Priority Projects

Question: Please provide a list of priority conservation research projects (and associated personnel staffing costs), in small, discrete increments starting at a funding level of $150,000,000 and ranging up to a funding level of $225,000,000. Identify with an asterisk all budgeted items that do not make the $182,591,000 R&D request level and identify with a double asterisk all unbudgeted items which are included within the $182,591,000 level.

Answer: The Department of Energy prepared the Conservation and Renewable Energy budget to advance a strong, reasoned program of conservation research and development. The FY 1991 request is considerably greater than previous requests and in certain areas is even greater than previous appropriations. Consequently, the Department believes that a $30,000,000 reduction, or a $40,000,000 increase, in funding is equally inappropriate. The Department determined that a $183,000,000 Federal investment would adequately fund the highest priority conservation research and development efforts.

Field Tests and Demonstrations

Question: Provide a cross-cut that shows the FY 1990 and FY 1991 funds for field tests and demonstrations. Also provide a brief description of the purpose of each test, its size, intended duration (number of months) and identify any industrial participation by name and cost-sharing amount. (Separate direct dollars from in-kind services.)

Answer: The following table provides the information requested for field tests and demonstrations by decision unit:

TRANSPORTATION

Alternative Fuels Utilization

	($ in thousands)	
Project Title	FY 1990	FY 1991
Federal Methanol Fleet	300	200

Description: The purpose of the demonstration is to generate operational and performance data on dedicated methanol vehicles during field operations in Federal fleets. Three fleets are in operation: at Lawrence Berkeley Laboratory, at Argonne National Laboratory, and at Oak Ridge National Laboratory. The fleets consist of a total of 20 vehicles modified for operation on methanol and a like number of control vehicles operating on gasoline. The demonstration was begun in 1986 with staggered fleet starts. The intended duration was four years, with phase out of one of the fleets beginning in 1991.

Ford Motor Company has provided improved catalysts for testing on the vehicles and improved cold starting hardware for evaluation. The participating laboratories have provided in-kind services in the form of drivers, data collection, and maintenance personnel. No direct industry cost sharing was involved.

	($ in thousands)	
Project Title	FY 1990	FY 1991
Alternative Motor Fuels Demonstration	4,450	6,500

Description: The purpose of the demonstration is to study and encourage the use of alternative fuels (methanol, ethanol, and CNG) in light duty government vehicles, buses, and heavy duty trucks beginning in 1990. The DOE will collect data on emissions, safety, fuel economy, economics, and performance. The sizes of the fleets are currently being determined. It is expected that up to several thousand light duty vehicles could be purchased over the life of the program with about half of the vehicles capable of operating on alcohols and half on CNG. The bus fleet demonstrations are in cooperation with UMTA and are expected to consist of several hundred buses. The heavy duty truck fleet is expected to consist of approximately 10 units in 1990 and 20 units in 1991.

The duration is expected to be at least 36 to 48 months. In-kind services will be provided by members of the trucking industry in accumulating mileage on demonstration units, participating in data collection, and providing more precise maintenance to the units. Engine manufacturers are expected to contribute in-kind services by providing engines and technical assistance to fleets at a minimal cost compared to actual development costs. A very rough estimate of in-kind services for additional efforts due to alternative fuels over typical operation may be on the order of $250,000 from each fleet operator and each engine manufacturer for each demonstration activity. Direct dollar cost-sharing will be negotiated for cooperative projects with State and local authorities and trade associations where possible.

Electric and Hybrid Vehicle Research and Development

	($ in thousands)	
Project Title	FY 1990	FY 1991
Electric Vehicle Site Operator Detroit Edison Company (DECO)	205	200

Description: Detroit Edison Company (DECO) is a private sector site. Under the new products testing program, DECO will be continuing to road test six GM-Griffon Vans. Vans will be modified for the evaluation and acceptance of two Chloride Electric Vehicle Systems (CEVS) MK 5 Control Systems and two Nelco traction motors which are standard components on the new GM G-Vans (12 months). DECO will also be procuring, installing, and testing three CEVS Controlled Output Battery Charges and one CEVS Battery Resonant Heating System for base line figures, and then evaluating against original equipment and standard van configuration (12 months). DECO is also testing the dual-shaft a.c. propulsion system (DSEP) van, a product of the DOE contract with Eaton Corporation (12 months). DECO is expecting to procure production GM G-Vans when the vehicles are made available in the third or fourth quarter of FY 1990 for internal use, as well as leasing to carefully selected customers. DECO cost-sharing amount is 60 percent.

Project Title	($ in thousands)	
	FY 1990	FY 1991
Electric Vehicle Site Operator Arizona Public Service (APS)	140	150

Description: Arizona Public Service (APS) is a private sector site. APS will continue to evaluate three Soleq d.c.-powered vehicles equipped with a series of sealed production lead-acid batteries and air conditioning not yet evaluated by the site operators (12 months). The lead-acid batteries being tested are Sonnenschein and ALCO 2200. Arizona Public Service is also expected to initiate procurement of a small number of G-Vans when they become available. APS cost sharing amount is 42 percent.

Project Title	($ in thousands)	
	FY 1990	FY 1991
Electric Vehicle Site Operator Southern California Edison (SCE)	220	200

Description: Southern California Edison is a new private sector site operator for FY 1990. Southern California Edison is road testing and evaluating the GM G-Van with an initial fleet of 15 prototype vehicles (15 months). When production G-Vans become available in the third or fourth quarter of FY 1990, SCE plans build up to a much larger fleet of 60 vehicles with 30 vehicles for internal use and 30 vehicles for a publicly leased fleet as funds permit. SCE cost sharing amount is 60 percent.

Project Title	($ in thousands)	
	FY 1990	FY 1991
Electric Vehicle Site Operator GTE Services Corporation	50	50

Description: GTE is a private sector site operator currently operating 19 electric vehicles at locations in California and Hawaii. GTE will be testing various off-the-shelf sealed and standard current technology lead-acid batteries in Los Angeles and Hawaii including Johnson Controls Phase IV Gel Cells, Sonnenschein 6V160, Exide GC-5, Trojan T145, and ALCO 2200 in various vehicles (12 months). GTE is evaluating the Eaton d.c.-powered Lynx delivered to GTE headquarters in Dallas, Texas, in FY 1989 (12 months). This vehicle has a two-speed automatic transmission and is the only one of its type currently in use by any member of the DOE Site Operators Program. GTE cost sharing portion is 73 percent.

Project Title	($ in thousands)	
	FY 1990	FY 1991
Electric Vehicle Site Operator L.A. Department of Water & Power	80	100

Description: The Los Angeles Department of Water and Power (LADWP) is a new public sector site operator for FY 1990. INEL is currently negotiating a contract with LADWP for FY 1990. LAWPD plans to procure a Chrysler T-115 Minivan, designed and upfitted by Soleq Corporation of Chicago, and an electric/hybrid vehicle designed and built by Unique Mobility of Englewood, Colorado. These vehicles will undergo testing and acceptance as well as providing normal operating and maintenance data (12 months). LADWP cost sharing portion is 50 percent.

	($ in thousands)	
Project Title	FY 1990	FY 1991
Electric Vehicle Site Operator York Technical College	25	100

Description: York Technical College is a new private sector site operator for FY 1990. Presently York Technical is refurbishing five nickel-iron battery powered Volkswagen sedans and pickups that were previously being tested by the Northrop Corporation in the DOE Site Operator Program (6 months). York Technical will also be conducting battery testing on the nickel-iron batteries once the vehicles become operational (6 months). York Technical College cost sharing portion is 30 percent with Duke Power & Light providing another 20 percent.

	($ in thousands)	
Project Title	FY 1990	FY 1991
Electric Vehicle Site Operator Sandia National Laboratory	30	50

Description: Sandia National Laboratory (SNL) is a public sector site. SNL will be upgrading the control and recharging systems on their seven Jet Escorts (4 months). Upon completion, SNL will be conducting operational testing on the newly configured vehicles (12 months). SNL cost sharing portion is 50 percent.

	($ in thousands)	
Project Title	FY 1990	FY 1991
Electric Vehicle Site Operator U.S. Navy	22	100

Description: The U.S. Navy is a public sector site. The Navy will install a solar array at the Naval Air Station in Bermuda for the sole purpose of charging five electric vehicles that will be utilized on the base. Two of the vehicles will incorporate a unique charging system developed by the University of Alabama at Huntsville (4 months). The Navy will then test and evaluate the solar array and vehicle charging systems (12 months). The Navy's portion of the cost-sharing is 80 percent.

	($ in thousands)	
Project Title	FY 1990	FY 1991
Electric Vehicle Site Operator University of Hawaii (HNEI)	30	0

Description: The Hawaii National Energy Institute (HNEI) is a public sector site. HNEI will continue capacity and life testing of the Sonnenschein Dryfit 6V-160 sealed lead-acid batteries as well as the Trojan T145, the Eagle Picher NIF-170, and the Exide GC-5 batteries (12 months). The activities at HNEI are not cost shared.

	($ in thousands)	
Project Title	FY 1990	FY 1991
Electric Vehicle Site Operator Program	503	550

Description: Idaho National Engineering Laboratory (INEL) is providing technical and subcontract management for the DOE Site Operator Program and its associated Users Task Force. Included in INEL responsibilities are: coordination of specific site tasks; procurement and logistics of new product testing; integration of EHV Program activities at INEL and the site operators; and collection, compilation, and reporting of all site operator data and activities on a monthly and quarterly basis.

Procurement of new parts, batteries, chargers, controls, etc. as developed for testing and evaluation by the different sites is also a part of the DOE Site Operator Program. INEL procures material and equipment as directed by DOE Headquarters, and arranges for transportation to the sites for testing and evaluation.

BUILDINGS AND COMMUNITY SYSTEMS

Building Systems

Project Title	($ in thousands)	
	FY 1990	FY 1991
Building Instrumentation and Monitoring	$0	$2,000

Description: Measure performance (instrumentation and monitoring) of several advanced system integration technologies by implementing them in new or existing buildings. This research would focus on 2-3 isolated field tests, each project lasting 24-36 months. Industry participation and cost sharing details are to be determined.

Project Title	($ in thousands)	
	FY 1990	FY 1991
Accelerated Building Guidelines and Standards	$600	$3,000

Description: Establish and publicize the opportunities for cost-effective energy efficiency in new commercial buildings by inviting architects, engineers and builders to compete in the design, construction, and operation of high value, energy efficient buildings. These buildings would be built to the new building energy conservation standards. Design manuals and training programs would be developed in conjunction with professional design societies, and State energy and code officials. Buildings would be monitored and their performance publicized.

Technology and Consumer Products

Project Title	($ in thousands)	
	FY 1990	FY 1991
Thermally Activated Heat Pump Absorption Technology	$0	$537

Description: Multiple unit field tests of Phillips Engineering Inc., residential size, Advanced GAX Cycle Absorption Heat Pump will begin in FY 1991. The test sites will be located in St. Joseph, Michigan (4 units); Dallas, Texas (3 units); and Oak Ridge, Tennessee (1 unit). Two units will be available for laboratory evaluation at Phillips Engineering, Inc., St. Joseph, Michigan. The duration of the field tests and demonstrations will be approximately two years.

Community Systems

Project Title	($ in thousands)	
	FY 1990	FY 1991
Vacuum Radiators	$95	$95

Description: When renovating an old district heating system to a modern hot water system the cost of replacing the radiators in the buildings is high. Retrofitting the old radiators with a vacuum technology could reduce the need for radiators replacement. A laboratory test has proven the application to be feasible. In FY 1990 the contractor will convert a small office building in St. Paul, Minnesota from a steam to a hot water heating system. As part of the conversion the radiators in the building will be retrofitted. The vacuum technology will be applied and tested. The test will be completed at the end of the heating season. In FY 1990 cost sharing in the amount of $22,000 is being provided by District Energy of St. Paul.

INDUSTRIAL ENERGY CONSERVATION

Separations Research

Project Title	($ in thousands) FY 90	FY 91
Ion Exchange Membranes	$100	-

Description: The objective of the project is to develop and test hollow fiber membrane systems for the separation of water/alcohol, water/chlorinated organics and water/dioxane mixtures. The field tests are expected to be conducted in plants owned by W. R. Grace and will probably take about 6 months. Cost sharing will be determined during contract negotiations.

Project Title	($ in thousands) FY 90	FY 91
Ceramic Catalytic Reactor	-	$350

Description: The objective of the project is to develop and test a high temperature, catalytic membrane reactor for the dehydrogenation of ethyl benzene to styrene. Successful development of this technology, by Alcoa, will reduce energy required through the partial or complete elimination of the distillation process step. The field test site, the duration of the field test, and extent of cost sharing will be determined in FY 1991.

Project Title	($ in thousands) FY 90	FY 91
Dry Textile Processing	-	$100

Description: The objective of the project is to develop and test dry coloring and finishing processes for textile products. This will replace the current wet process that requires significant energy for product drying. The field test site, the duration of the field test, the cost sharing participants and the extent of cost sharing will be determined in FY 1991.

Project Title	($ in thousands) FY 90	FY 91
Sweeten Natural Gas	-	$100

Description: The objective of this project is to develop and test membrane systems that can be used to remove hydrogen sulfide and carbon dioxide from natural gas. Laboratory work at Allied Signal is complete. The location of the field test site, its duration, the cost-sharing participants and the extent of the cost share will be determined in FY 1991.

Project Title	($ in thousands) FY 90	FY 91
Continuous Annular Chromatography	-	$150

Description: The objective of the project is to demonstrate the feasibility to separate proteins and other chemicals for the biotech industry using continuous annular chromatography technology. The location of the field test, the duration of the test, the cost-sharing participants and the extent of the cost-sharing are being determined.

Sensors and Controls

Project Title	($ in thousands) FY 90	FY 91
On-line Chemical Composition Analyzer	$350	-

Description: The objective of this project is to develop and test an on-line, real-time, chemical composition analyzer for distillation columns, using infrared laser Raman spectroscopy. The proposed field test, Phase III, will evaluate the sensor system developed in Phases I and II by the University of Tennessee, using a distillation column operated by Tennessee Eastman Company. The information generated by the analyzer will be used to control the solvent/acid/water distillation column. The test will last approximately 10 months; cost-sharing will be determined during contract negotiations.

Project Title	($ in thousands) FY 90	FY 91
Advanced Moisture Sensor	$300	-

Description: The objective of this project is to develop and test a hydrogen transient nuclear magnetic resonance sensor for measurement of the moisture content of materials during drying. The proposed field test will be carried out at the American Fructose plant in Dimmit, Texas on a corn gluten processing line, which produces 165,000 lbs. of product per day. The test will last 4-5 months. Cost sharing will be determined during contract negotiations.

Project Title	($ in thousands) FY 90	FY 91
Sonic Sensor System	-	$315

Description: The objective of this project is to develop and test a sensor that will measure the temperature of particulate foodstuffs during processing, using speed of sound tomography. Laboratory research was started in October 1989. Consequently the field test site, duration of the field test, the industrial participants, and the extent of cost sharing have not been determined.

Project Title	($ in thousands) FY 90	FY 91
Crop Ripeness Sensor	-	$250

Description: The objective of this project is to develop and test a sensor that will determine the ripeness/quality of fruit, prior to marketing and processing. Energy savings can be achieved by saving 10% of the invested energy (harvest, process, and distribution) lost when products spoil. Laboratory research was initiated in October 1989. Consequently the field test site, the duration of the field test, the industrial participants, and the extent of cost sharing have not been determined.

Project Title	($ in thousands) FY 90	FY 91
Particle Size Distribution Sensor	$50	-

Description: The objective of this project is to develop and test a high precision sensor capable of determining the particle size of industrial pigment slurries during processing. The field test will be conducted on a production line at Dupont, and will last about five months. Direct cost-sharing of $50,000 is anticipated to be obtained from Dupont.

Project Title	($ in thousands) FY 90	FY 91
Paper Mechanical Properties Sensor	$282	$118

Description: The objective of the program is to develop and test an on-line, ultrasonic sensor capable of measuring the thickness of paper. A simulated portion of a commercial paper unit, located at the Institute of Paper Science and Technology in Atlanta, will be used for the "field" test. The test will last about 12 months. A direct cost-share of 25 percent has been obtained by the Institute of Paper Science and Technology.

Project Title	($ in thousands) FY 90	FY 91
Paper Pulp Consistency Sensor	-	$50

Description: The objective of this project is to develop and test a high performance, paper pulp consistency sensor that will measure the physical characteristics of the fibers in the pulp. The site location for the field test, the duration of the test, the cost-sharing participant and the extent of cost-sharing will be determined in FY 1991.

Project Title	($ in thousands) FY 90	FY 91
Lignin Sensor for Paper Pulp Mills	$100	$100

Description: The objective of the project is to develop and test a sensor to determine lignin concentration in paper pulp. The sensor will be tested in eight to ten paper mills; the duration of each test will be about two weeks. Direct cost-sharing of 25 percent has been obtained from Bailey Controls, an instrument manufacturer.

Waste Materials Utilization - Liquid/Solid Wastes

Project Title	($ in thousands) FY 90	FY 91
Potato Wastes to Biodegradable Plastics	$100	[illegible]

Size	Test Duration (Months)	Industrial Participation	Cost Share Direct Dollars	In Kind
Multiple (less than 1 pound)	Up to 12 months for each test	Enzyme Bio-Systems	TBD	--
		CPC International	TBD	--
		Phyton	--	TBD
		TVA	--	$175
		ADM	--	TBD

Description: A process that converts specific food wastes, in this case potato wastes, to lactic acid as an intermediate feedstock and then the conversion of the lactic acid to biodegradable plastic sheets is being developed. The plastic sheet, while acting as a mulch, will also contain pesticides and growth stimulants. Laboratory tests of the several steps have been made, the complete system is to be put together and field test samples prepared.

Waste Energy Reduction - Combustion

Project Title	($ in thousands) FY 90	FY 91
Wet Oxidation	$467	$460

Size	Test Duration (Months)	Industrial Participation	Cost Share Direct Dollars	In Kind
2-10 ton/day	1.5 months	Stone & Webster; Host site not determined.	TBD	TBD

Description: The combustion of industrial wastes at super critical temperatures, in the presence of steam, is being developed. The wet oxidation process is not new, but its use in the past has been limited to modest temperatures and pressures and the efficiency obtained was low. By working at supercritical temperatures and pressures (over 706°F and 3210 psi) industrial wastes such as food processing materials may be converted efficiently to industrial process steam and/or electricity. Stone & Webster is designing a prototype unit and a host site, which will provide cost share, is being sought.

Waste Energy Reduction - Heat Exchangers

Project Title	($ in thousands) FY 90	FY 91
Fouling and Corrosion Probes	$156	$125

Size	Test Duration (Months)	Industrial Participation	Cost Share Direct Dollars	In Kind
N.A. (ca. 2000°F range)	1 month in each of two locations	Dupont for one location; TBD for the second	(To be negotiated with 30% goal)	

Description: The fouling and the corrosion probes are used to quantify the effect that the waste gas streams will have on heat exchangers and other equipment. Initially they gather design data, later they may be used as operations instrumentation. The purposes of the tests are to qualify the new designs and to gather some initial design data.

Waste Energy Reduction - Heat Pumps

Project Title	($ in thousands) FY 90	FY 91
Brayton Solvent Recovery Units	$660	$650

Size	Test Duration (Months)	Industrial Participation	Cost Share Direct Dollars	In Kind
250 CFM (mobile)	1 month	3M	$200	
2000 CFM	12 months	EPRI	200	
8000 CFM	12 months	Southern CA Edison	190	
		NuCon		$275

Description: Three field tests are planned for equipment developed under this program. The first is to install the 250 CFM mobile unit in at least four plants in southern California for short periods, to obtain design data for construction of larger units. The 8000 CFM unit is to be tested in a magnetic tape plant in Greenville, South Carolina, for service and performance testing. The host site for the 2000 CFM unit has not been selected yet.

Project Title	($ in thousands) FY 90	FY 91
Pinch Technology - Heat Pumps	$506	$300

Size	Test Duration (Months)	Industrial Participation	Cost Share Direct Dollars	Cost Share In Kind
10-20 million Btu/yr	6 months each test	Kerr-McGee Refinery American Maize Chevron TBD	(To be negotiated, goal is 50% in cash)	

Description: Fourteen different sites have been investigated in Phase I case studies. A number, probably four depending on funding, will be selected for design preparations; one or more of these will be selected for construction, installation and test. The probable techniques will be mechanical-vapor recompression, thermal-vapor recompression and Rankine Cycle units. The purpose of the project is to confirm performance and operational characterization of units selected using the "Pinch" technique.

Electric and Hybrid Vehicles

Question: How is the Department utilizing the additional funds earmarked by Congress for the Site Operators User Task Force program in Fiscal Year 1990?

Answer: The appropriated funds allowed the addition of three new sites to the program: Los Angeles Department of Water and Power, York Technical College/Duke Power in South Carolina, and one yet to be named. Of the $650,000 added to the budget request, approximately $535,000 will be spent on the purchase of new vehicles and the remainder on site operations, component purchases, and testing.

Question: Have funds been used for vehicle acquisition? If so, how many vehicles have been acquired/are planned to be acquired?

Answer: Approximately 82 percent of the funds added to the FY 1990 budget request are planned for vehicle acquisition. This would allow for the purchase of up to 28 vehicles at the 50 percent maximum cost-share level. Some contractors are considering a higher cost share which would result in more vehicles being purchased.

Question: Who has or will have acquired the vehicles?

Answer: Many of the site operator contracts are under negotiation and the exact number of vehicles to be purchased with government support has not been determined. The following chart presents an estimate of the new vehicle acquisition by site operator.

Southern California Edison	20 GM G-Vans
Los Angeles Dept. of Water and Power	2 Unique Mobility Vans
Arizona Public Service	5 GM G-Vans
York Technical/Duke Power	2 GM G-Vans
U.S. Navy	3 GM G-Vans
Site yet to be named	4 GM G-Vans

Question: What activities are contemplated under the budget request submitted for the Site Operators program in Fiscal Year 1991?

Answer: The program will continue with long-term vehicle and component testing of existing equipment, and planning for the acquisition of up to 14 new vehicles. No new sites are currently planned.

Question: What is the FY 1990 cost-sharing level for the Task Force's activities and what is the anticipated cost-sharing level for FY 1991?

	Approximate Cost-Share Levels (includes operation costs and purchases)	
	FY 1990	FY 1991
Southern California Edison	72%	70%
Los Angeles DWP	66%	60%
GTE	58%	60%
Arizona Public Service	54%	60%
York Technical/Duke Power	42%	60%
U.S. Navy	80%	55%
Sandia National Laboratories	50%	50%
Hawaii Natural Energy Inst.	50%	50%
Site yet to be named	50%	50%

Question: Did the availability of additional FY 1990 funds for this program generate a significant response among entities interested in participating in the program? If so, what new entities have joined, or have indicated an interest in joining, the program?

Answer: While we have no way of knowing how the appropriated FY 1990 funds affected interest in this program, we can report that since the beginning of FY 1990 numerous organizations have contacted DOE inquiring about the Site Operators User Task Force program. Of those that have called, the following have either joined or expressed an interest in joining:

Los Angeles Department of Water and Power----- (joined)
York Technical College/Duke Power ------------ (joined)
Pacific Gas and Electric -------------------- (interested)
West Virginia University -------------------- (interested)
South Central Electric Vehicle Consortium ---- (interested)
National Center for Atmospheric Research ----- (interested)
New York University ------------------------- (interested)
Commonwealth Edison ------------------------- (interested)
University of Alabama, Huntsville ------------ (interested)
Solar Energy Research Institute -------------- (interested)

Question: If additional funds were available for the Task Force in Fiscal Year 1991, how would DOE allocate the funds among new program participants? Would there be an emphasis on the Southern California area?

Answer: The Department of Energy prepared the Conservation and Renewable Energy budget to advance a strong, reasoned program of conservation research and development. The FY 1991 request is considerably greater than previous requests and in certain areas is even greater than previous approriations. Consequently, the Department believes that a further increase in funding is inappropriate. If additional funds were appropriated, however, priority could be given to the purchase of vehicles for operation in environmental non-attainment areas. Southern California is at or near the top of the list of the environmental non-attainment regions.

	Approximate Cost-Share Levels (includes operation costs and purchases)	
	FY 1990	FY 1991
Southern California Edison	72%	70%
Los Angeles DWP	66%	60%
GTE	58%	60%
Arizona Public Service	54%	60%
York Technical/Duke Power	42%	60%
U.S. Navy	80%	55%
Sandia National Laboratories	50%	50%
Hawaii Natural Energy Inst.	50%	50%
Site yet to be named	50%	50%

Question: Did the availability of additional FY 1990 funds for this program generate a significant response among entities interested in participating in the program? If so, what new entities have joined, or have indicated an interest in joining, the program?

Answer: While we have no way of knowing how the appropriated FY 1990 funds affected interest in this program, we can report that since the beginning of FY 1990 numerous organizations have contacted DOE inquiring about the Site Operators User Task Force program. Of those that have called, the following have either joined or expressed an interest in joining:

Los Angeles Department of Water and Power----- (joined)
York Technical College/Duke Power ------------ (joined)
Pacific Gas and Electric -------------------- (interested)
West Virginia University -------------------- (interested)
South Central Electric Vehicle Consortium ---- (interested)
National Center for Atmospheric Research ----- (interested)
New York University ------------------------- (interested)
Commonwealth Edison ------------------------- (interested)
University of Alabama, Huntsville ------------ (interested)
Solar Energy Research Institute -------------- (interested)

Question: If additional funds were available for the Task Force in Fiscal Year 1991, how would DOE allocate the funds among new program participants? Would there be an emphasis on the Southern California area?

Answer: The Department of Energy prepared the Conservation and Renewable Energy budget to advance a strong, reasoned program of conservation research and development. The FY 1991 request is considerably greater than previous requests and in certain areas is even greater than previous appropriations. Consequently, the Department believes that a further increase in funding is inappropriate. If additional funds were appropriated, however, priority could be given to the purchase of vehicles for operation in environmental non-attainment areas. Southern California is at or near the top of the list of the environmental non-attainment regions.

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

Question: While the President's FY 1991 request for Energy Conservation R&D of $174.9 million is below the FY 1990 enacted level of $189.9 million, it is well above the President's FY 1990 request of $85 million.

Obviously, there has been a change in the thinking toward the Conservation R&D program during the past twelve months, and more attention is being paid to the overall budget as well as to Congressional priorities. Since you have been on board for part of those twelve months, Mr. Davis, I assume that much of the credit for this turnaround in the R&D budget should be directed toward you. I appreciate your attention.

Was there anything specific that provided you with an opportunity to increase the emphasis on R&D?

Answer: Although the National Energy Strategy is not yet complete, public input to date reveals broad interest in increased emphasis on energy efficiency improvements and renewable energy. Accordingly, in FY 1991, we are increasing our commitment to conservation and renewables research and development by 8 percent over the FY 1990 appropriation, and by 78 percent over our FY 1990 request.

Using energy more efficiently and developing cost-competitive renewable energy can contribute to both a better environment and reduced U.S. oil imports. We already have seen how important energy efficiency can be to our Nation. Fuel efficiency of new cars and trucks has increased almost 90 percent since 1973; growth in residential energy use has been kept to less than five percent despite an increase of more than 20 percent in the number of households; and industry's energy use per dollar of output has declined by more than 20 percent. The relative decline in oil use was even greater. Indeed, excluding the transportation sector, energy-using sectors reduced their oil consumption by two million barrels per day compared to 1973.

Continuing this progress is a great challenge because many of the easy, low-cost changes to improve efficiency have been made already. To sustain progress we need to develop programs and policies that will effectively foster energy efficiency even with current energy prices. This includes the development of more efficient technologies as well as targeted federal efforts to being these technologies into use by the private sector.

Technology Transfer

Question: Your FY 1991 budget puts a greater emphasis on technology transfer, especially in the Buildings program and, to a lesser extent, the Industrial and Transportation programs. In the Buildings program, the general thrust is to integrate current technology into the marketplace.

Is technology transfer in the Buildings program an area we have let slide in the past?

Answer: The Department's focus in the 1980's was on long-term, generic research. We now are giving more attention to getting the results of this research into products and processes that increase our energy efficiency and add other immediate values, such as environmental protection and increased competitiveness. This change means giving more attention to technology transfer.

Question: How did you decide to increase the emphasis on the Buildings program more than on the Industrial or Transportation programs?

Answer: Technology transfer is more challenging in the Buildings sector than other sectors because of the large number of homeowners, homebuilders, architects, engineers, and building managers as well as product manufacturers that need to be reached. The request also includes the Federal Energy Management Program where we want to demonstrate leadership through the efficient management of our own Federal buildings and operations.

Question: How are you focusing this integration: By selling current technologies or by working with government entities to have codes changed?

Answer: An effective technology transfer effort doesn't rely on a single strategy. We have a number to choose from, including information and education, product labeling, financial incentives, and guidelines and standards programs, as well as serving as a good example. These strategies are most powerful when they are combined and reinforce one another.

For example, in the lighting area, we will support education programs for lighting designers, help develop labeling programs that identify efficient lighting systems, encourage utilities to provide incentives for lighting retrofits, and set an example by relighting Federal buildings. We will work with State and local governments, utilities and industry toward a consensus on the mix of strategies to be used. Combined in this way, significant changes can be made quite rapidly.

Conservation Initiatives

Question: On January 26, 1990, the Department held a news conference outlining conservation initiatives to be explored over the next six years. Anticipated savings resulting from the energy efficiency initiatives through the year 2000 could exceed $32 billion. In fiscal year 1990, you indicated that $35 million will be reprogrammed to start this effort. What is your time frame for this reprogramming?

Answer: We plan to spend a total of $34.9 million in FY 1990 for the initiatives, including funds already allocated to the subject areas in Energy Conservation and Renewable Energy programs. The reprogramming for the Energy Conservation initiatives totals $5.0 million and was sent to the Senate Interior Appropriations Subcommittee on February 28, 1990.

Reducing Regulatory Restraints for Hydropower

Question: In the press release outlining your conservation initiatives, you stated that one of your goals was to promote full utilization of all hydropower resources by reducing the regulatory restraints and developing accurate assessments of the remaining resource potential. What do you see as some of the regulatory constraints in hydropower which can be reduced?

Answer: The preliminary review of National Energy Strategy (NES) testimony to date indicates that hydropower projects are subject to a host of multiple regulatory requirements at several levels in the licensing process and by numerous federal and State agencies. The hydropower industry believes that reform of the regulatory process is feasible. The regulatory agencies believe that the regulatory process necessarily reflects changes enacted in the Federal Power Act (FPA) amendments and other laws. The licensing/permitting process has been characterized by industry as being excessively time consuming, costly and disorganized, largely due to the duplicative environmental reviews with overlapping layers of jurisdiction at federal and State levels. Since 1960, the number of laws and decisions that must be followed in acting on a hydropower license application has grown significantly, while the number of agencies that can impede a FERC licensing decision has multiplied. Over the past decade the typical average licensing process time period has increased from approximately 1 1/2 to 5 years. These factors have combined to make hydropower development economically unattractive. Regulatory and institutional reforms appear to be essential to further development. Also important is the availability of resources to expand and upgrade capacity at existing Federal dams. The Department will have to carefully identify and evaluate both legislative and administrative options. Legislative options may be limited given the history of deliberations on the FPA and related amendments. Administrative and regulatory reform may be more feasible, especially if focused on expanding capacity or installing new capacity at existing dams. In addition, the Federal Government must work towards consensus on methodologies to evaluate the societal cost and benefits of project development, if unconstructed projects are to become once again a viable option.

Development of Accurate Hydropower Resource Assessment

Question: What do you mean when you indicate the need to develop accurate assessments of the hydropower resource potential? Are current assessments inaccurate or outdated?

Answer: Estimates of the hydropower resource potential are usually based upon the Federal Energy Regulatory Commission (FERC) data base. However, these estimates often vary because they are based on different assumptions. For example, some estimates include both conventional hydropower and pumped storage; while others do not. Some estimates have been refined by incorporating competing uses, while others have not. The last FERC published hydropower resource data was in January 1988. The Department, in cooperation with FERC and others, is updating this data to more accurately define the hydropower potential, or that portion of the resource base which can be developed under current regulatory, environmental and institutional conditions.

Prioritizing Hydropower Regulatory Issues

Question: Beyond working with the particular federal or State agencies, what are your specific plans? Have you identified problems in the regulatory process you would like to address?

Answer: While the National Energy Strategy (NES) testimony has identified a number of regulatory issues and potential reforms, the Department must now analyze and prioritize these issues and reform options to determine those areas where effort might be most beneficially spent.

Buildings and Community Systems Program

Question: The fiscal year 1991 justification indicates the goal of the buildings program is to hold consumption in 2010 to current levels. This is to be done through a national effort to achieve the maximum, cost effective energy efficiency (page 267). The national effort has three parts: technology R&D, technology transfer and Congressional mandated and regulatory program support.

If this national effort were not undertaken, how do you foresee the use of energy in the building sector expanding from its current level of 28 quads?

Answer: The recently released Annual Energy Outlook by the Energy Information Agency presents a forecasts for 2010 of 38 quads. To hold consumption to the 1989 level of 28 quads implies saving 10 quads.

Question: Of this increase, could you assign a particular amount of energy use to each of the three parts of the national effort, assuming only inflationary funding adjustments.

Answer: Since the three parts are complementary, it would be very difficult to apportion the savings among the three activities. In general, most current R&D will provide significant savings only after 2000 since there is about a 15 year lag before significant adoption of new technologies by the housing industry. Most of the savings by 2010 will result from the increased adoption of existing cost effective technologies, which will be in large part the result of the technology transfer activities.

Question: What type of additional mandated and regulatory program support do you anticipate in the next few years?

Answer: It is important to use a mix of strategies including information and education, product labeling, financial incentives, and leading-by-example, as well as standards and regulatory programs. In this mix, regulation is the choice of last resort, since it invokes the command and control authority of the Federal government and, thereby, limits free choice. Instead, we want to focus attention on strengthening incentives for the private sector to lead the way in adopting energy efficiency technologies, through research and development and technology transfer.

Building Subsystems Interaction

Question: An area where you have requested an increase of 67 percent is the building subsystems interaction subactivity (page 274). It appears from the justification that the goal of this effort is to complete an automated building design that will be acceptable to the industry (page 281).

How has the industry responded to this effort so far?

Answer: The majority of additional funding requested for the Building Subsystems Interaction (BSI) activity is for a joint industry/government research effort to measure performance (instrumentation and monitoring) of several advanced system integration technologies by implementing them in new and existing buildings. Industry representatives identified a need to conduct this research during the building systems integration laboratory (BSIL) technical review process.

As a result of the BSIL feasibility study, the Administration believes that many of the objectives of the commercial building system integration program can be obtained through careful instrumentation and monitoring of new and existing buildings without a dedicated laboratory. This project will allow us to test this approach.

Question: Are the necessary incentives in place for industry to embrace this type of activity?

Answer: No, but project planning will address this critical issue.

Question: If not, what do you feel are the necessary incentives?

Answer: To ensure that industry accepts any technology, such as those under development in the BSI area, industry representatives must be involved in the development, and there must be profit potential, both of which are important objectives of this project. The project planning and development will take place in cooperation with industry and the test building will provide an environment to promote product research and development while providing the government with valuable performance information for new technologies.

Question: What are the long term plans for this effort?

Answer: To conduct and promote research which advances energy management systems to the point where they take an active role in building operation, not only monitoring building vital signs, but providing the building operator with system optimization and diagnostics as well. Also, to effectively link designers intentions with building operation by using expert system technology within energy management systems, and finally to provide incentive to industry for a standard control protocol agreement.

Question: What are the long term energy usage implications?

Answer: The commercial building sector accounts for approximately 15% of the nations primary energy use. Although the majority of building energy consumption is a result of building energy loads which are set during the design process, the average building operates inefficiently, and often uses up to 40% more energy than it was designed to use. This project will initiate research needed to advance building operation in order to reduce these inefficiencies.

Standards and Guidelines

Question: In FY 1990 $800,000 was appropriated in the Standards and Guidelines subactivity. For FY 1991, you have requested $5.0 million (page 284).

Generally, the justification indicates that your efforts will be focused on increasing the overall awareness of the benefits of energy conservation.

Can you elaborate on this new effort?

Answer: This new initiative will first develop training materials for the implementation of the commercial building standards. This will be done in cooperation with design professionals, product manufacturers, State and local code officials, and Federal agencies. These materials will then be used in training programs sponsored by, and largely carried out by, these same participating organizations. A major national design competition will be held to make people aware of the standards, demonstrate how easy they are to use, demonstrate the energy savings potential, and generally stimulate Federal, State and local entities to accelerate their adoption and use.

Question: Where does the current effort fall down?

Answer: The current effort is inadequately funded to implement the standards. We have spent nearly nine million dollars to develop these standards. To realize the benefits of this investment, we must make people more aware of the standards, their ease of use and the benefits of implementation. This is not unlike a manufacturer who has developed a good product. If he does not make potential users aware of the product, it might as well not have been developed.

Question: According to your justification (page 283), the Department is in the process of preparing interim voluntary residential standards. During FY 1991, you anticipate continuing this effort and working with state and local jurisdictions, professional and trade organizations and model code organizations to develop model code language and explanatory material and to facilitate voluntary adoption of the standards.

How has the private sector received this effort?

Answer: Unfortunately, the private sector is not yet broadly aware of these residential standards. A notice presenting the standards and seeking public comment will be issued later this year. However, those who have been exposed to the earlier recommendations for the standards have been receptive.

Several States have expressed interest in using the information developed for the voluntary standards as the basis for their own energy standards. Specifically, those States are Connecticut, Massachusetts, Florida and Texas. However, no formal declaration of intent to implement the standards has been given.

The Manufactured Housing Institute (MHI) has used a developmental version of the voluntary standards to develop recommendations to the Department of Housing and Urban Development (HUD) for updating the HUD manufactured housing standards. The American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) has discussed the possibility of using the standards as a future update to their 90.2 standards. The National Association of Home Builders (NAHB) has expressed interest in reviewing the standards to determine the effects on its constituency.

The National Conference of States on Building Codes and Standards (NCSBCS) was instrumental in helping develop and pretest the standards along with several local and State code officials.

Question: What type of resistance do you anticipate?

Answer: Initially, some resistance is expected from three possible sources. We expect some resistance from competing industries jockeying for market share. For example, mineral insulation vs masonry. We also expect that some builders and developers will express concern that the standards will drive up the price of construction, thereby increasing the possibility that the houses will not sell as fast. Finally, we expect that a few users may be intimidated by the computer program that facilitates the use of the standards.

However, we believe that an effective training and education procedure can overcome such initial resistance.

Question: The justification also indicates that you intend to initiate demonstration projects in at least five climatic regions to (page 283):

1. assess the impact of standards on builders, the cost of construction, designers and the design process;
2. analyze the impact of construction costs on the ability of low to moderate income persons to purchase or rent housing; and
3. analyze the impact of standards on energy savings by energy type.

Has research in these areas already been conducted?

Answer: The only research that has been completed is that on the impact of the commercial building standards on energy savings by energy types. Plans have been made for addressing the other issues this year and next.

Question: If so, what does the research indicate for those three areas?

Answer: The research indicates that if the standards were adopted the resulting energy savings would average 20-25% over current design practice. The actual savings for individual buildings will vary among building types and from one region of the country to another.

Question: How are you assessing the impact of Commercial Standards on designers and the building design process?

Answer: We have yet to make that assessment, but plan to do so using a design/redesign approach similar to that done in early development of the standards. Buildings which are being designed to current standards will be sought out. Those same buildings will be redesigned using the interim standards. Both the initial design process and the redesign process will be observed and an assessment of the impact will be made on that basis.

Technology and Consumer Products

Question: The fiscal year 1991 goal for cost sharing in the Technology and Consumer Products program is 20 percent, an increase from the fiscal year 1989 level of 17 percent (page 287).

This goal comes at a time when you are proposing a 24 percent reduction in funding for the program.

What is the expected FY 1990 cost share?

Answer: The expected FY 1990 cost share for the Technology and Consumer Products Program is $3,475K or 20 percent. Cost share per individual project is $850K (12 percent) for Thermally Activated Heat Pump; $2,225K (34 percent) for Advanced Refrigeration Systems; and $400K (14 percent) for Advanced Lighting.

Question: Where do you anticipate the industry will increase their cost share?

Answer: With the present level of funding in FY 1990, we anticipate that the industry will increase its cost sharing to expand research associated with CFC refrigerant alternatives under the Advanced Refrigeration Systems project.

Question: Does this increase in cost share focus on your efforts to turn over the heat pump to industry?

Answer: No. This cost share increase focuses on cooperative industry consortia on CFC substitutes. Heat pump cost sharing is not expected to increase significantly.

Chlorofluorocarbons (CFC)

Question: The FY 1991 budget indicates your desire to expand cooperative research with industry consortia on materials compatibility and lubricants for substitute refrigerants (page 289). To implement this expansion, you have requested a 33 percent increase in research associated with CFC refrigerant alternatives. How will this effort be expanded?

Answer: In FY 1990, the Department entered a cooperative arrangement with an industry consortium to study materials compatibility and lubricants for substitute refrigerants. The FY 1990 effort is focusing on a limited number of leading alternative refrigerants in three major activities: data collection and dissemination, materials compatibility testing, and methods development. As industry believes this effort should be a 5-7 year research program, the Department has requested the increase in research associated with CFC alternatives in FY 1991. This expansion would cover many promising second-tier refrigerants that were not included in the FY 1990 effort due to budget constraints and would accelerate the methods development effort for predicting whether the lubricants and materials would be compatible with the new refrigerants, as well as continue the FY 1990 efforts on testing the leading alternative refrigerants for compatibility.

Question: Comparing your efforts on substitute refrigerants between fiscal year 1990 and fiscal year 1991 it appears that we are either losing ground or not moving very quickly (page 289). In fiscal year 1990, the budget indicates that performance testing will be initiated on new refrigeration and air conditioning systems with the substitute refrigerants. In fiscal year 1991, however, the budget does not mention performance testing but appears to focus more on characterizing the leading substitutes. Would you care to comment on where we stand with respect to CFC alternatives?

Answer: In FY 1990, the main focus of the research program on substitute refrigerants is performance testing of many of the leading CFC alternatives in existing refrigerators-freezers. The purpose is to quickly identify a "quick fix" or a "drop-in" refrigerant as an appropriate CFC substitute. Results from these tests are showing that no "quick fixes" or "drop-in" refrigerants are likely. The results are also showing that the air-conditioning or refrigeration equipment must be completely redesigned and optimized for the substitute refrigerants. Consequently, the Department has realized that a more concerted, fundamental research effort now is required and has appropriately reflected this programmatic change in the FY 1991 budget.

Question: During last year's hearing the Department indicated that the loss in efficiency found in CFC substitutes would lead to an increase in energy consumption of 0.4 to 2.3 quads annually. In addition, the Department stated that the added energy consumption could exacerbate greenhouse warming.

Has this energy consumption range narrowed in the past year?

Answer: The Department has found no information which would change its estimates that CFC substitutes could lead to an increase in energy consumption of 0.4 to 2.3 quads annually. The estimates were based on simplifying assumptions that tend to slightly overstate the energy impacts. The energy impacts also tend to be greater under more stringent CFC regulations (a complete ban of chlorine containing compounds resulted in the estimate of 2.3 quads). Due to the fact that about 25 percent of all electricity is used by air conditioning and refrigeration equipment, the added energy consumption would exacerbate greenhouse warming. For example, a 10 percent efficiency drop due to CFC substitutes would result in a 2.5 percent increase in electricity generation. Added emissions from this generation process causes the exacerbation.

In its cooperative efforts with industry, the Department has found some instances when testing an alternative refrigerant showed little loss in efficiency, or possibly, slight energy savings. Unfortunately, these test were on individual components, like compressors. When these tests were repeated in actual refrigerators, an energy penalty was measured.

Similarly, there are limited test data on modified systems which show little or no penalty with CFC substitutes. However, these modified systems show even greater efficiency gains if CFCs are used. The best example of this would be centrifugal chillers which have larger heat exchangers. Some industry data indicate only a slight efficiency penalty when HCFC-123 is used in these chillers; but these same systems would show a much larger efficiency gain if CFC-11 were used.

Question: At what point do you feel additional energy usage with substitutes is less damaging to the environment than CFC's?

Answer: The Department is concerned about comparing the effects of limited CFC usage and the resultant effect on depleting ozone, with using less efficient CFC substitutes which can exacerbate greenhouse gas accumulation. Since the Department's efforts have been on testing CFC substitutes, we have not adequately examined the environmental trade-offs between reduced ozone depletion and increased greenhouse gas accumulation. However, we feel that this is an extremely important policy issue which will receive greater attention as research continues.

Technology Evaluation, Analysis And Planning

Question: You are proposing a large increase (+386%) in the Technology Evaluation, Analysis and Planning program for fiscal year 1991 (page 293). The focus of this effort is to establish external teams to assist in characterizing and reassessing current and potential buildings energy-efficient technologies and practices.

What are some of the barriers to market penetration?

Answer: The external teams focus only on a critical review of the technology characteristics and assumptions used to prioritize BCS projects. The remaining planning and assessment tasks are performed by BCS staff with input from the National Laboratories. Some major barriers to market penetration include:

- lack of information on cost, benefits and availability to producers, dealers, designers, developers, installers, and consumers;
- lack of availability because market share is small and dealers do not want to stock them because of lack of familiarity with the products and how to install and service them;
- cost effectiveness and performance information is not considered trustworthy;
- builder reluctance to adopt new technologies, designs and practices that are not demanded by customers
- first costs are more important than life cycle costs in building construction and retrofit decision making.

Question: What incentives are necessary to break down these barriers?

Answer: A wide variety of incentives would be required to break down the numerous barriers. Because the benefits of the technologies and practices vary by geographic region and application, the incentives would also have to vary. Incentives that could be used include zero or low interest loans, standards, tax credits, surcharges for choosing inefficient technologies, government or utility cost sharing, utility rate adjustments, and subsidies. Some utilities implementing demand side management programs have tried a number of incentive programs and the results are currently being collected and analyzed by the LCUP program.

Question: Could you elaborate on the theory behind these "external teams"?

Answer: In the annual process of critically evaluating the research program and setting priorities and establishing budget requests, the status, characteristics and probability of technical success of each project are considered. This information is provided by the program managers and researchers. Teams of experts from outside the programs would help confirm these estimates and help ensure that judgement about probability of technical success would be consistent across technologies. This would improve program planning by helping to assure that the best options are being pursued.

Least Cost Planning Initiative

Question: During last year's hearing on the fiscal year 1990 budget, you indicated that in view of the variety of programs relating to research on energy efficiency and the willingness of utilities and utility organizations to provide support, no funding was requested for the "Least-Cost Utility Planning Initiative". Congress subsequently provided funding for this program.

In fiscal year 1991, however, you have requested an increase in this program of 203 percent over the fiscal year 1990 level (page 292). This increase will expand the program to include all fuel sources in electricity planning and to develop least-cost planning for gas utilities.

What successes has this program seen in the past year to merit such a large funding increase?

Answer: The successes of Least Cost Utility Planning (LCUP) and the need for an expanded program were documented and described in public hearings and written submissions to the record compiled for the National Energy Strategy (NES). This strategy, as you know, was initiated by Secretary James Watkins, during the summer of 1989. A recent example of the positive NES testimony about LCUP was presented by Commissioner Mary Lou Munts of the Wisconsin Public Utility Commission on January 22, 1990. She described the LCUP grant provided to the Wisconsin Public Utility Commission, which was used to develop a new, independent state-level organization to conduct cooperative demand-side management research and development projects.

Another LCUP success which was cited in the Providence, Rhode Island National Energy Strategy hearing in November 1989 was the initiation of a high efficiency commercial lighting program. This program, which has been implemented by the five Rhode Island utilities, has produced a state-wide commercial lighting assessment and direct installation program. Additional LCUP funds will be provided for evaluation of the impacts of this program on the utilities' load requirements.

These types of success have suggested specific types of programs to be developed and have created working relationships in states between utility commissions and utilities. With the requested funds, LCUP will expand the number of programs and participants. The expanded program will include projects on review of states' regulatory regimes, assessments of demand side management program performance, environmental externalities, integrated resource planning for gas utilities, and expanded information exchange and transfer.

Question: What fuel sources in electricity has the program focused on in the past?

Answer: In the past, the program has focused on end-uses of electricity, not on fuel sources.

Question: At last year's hearing on the house side, Dr. Berg stated that, "it's easy to assess a rate when you're talking about building a new power plant, but you have a difficult time assessing rates based on how much energy you're going to save."

How does the proposed expansion address this problem?

Answer: An important aspect of the expanded program will be the collection and analysis of actual metered data from utility-sponsored conservation and load management programs. As the interest increases by public utility commissions and by utilities for changing the current rate structure to "reward" utilities for implementing conservation programs, there will be increased need for accurate measurement of the impact of these programs.

As part of this effort the feasibility of creating a national end-use and load-shape data center to collect, evaluate, and disseminate information on energy saved from a variety of utilities' conservation programs will be investigated. A related effort will be development of a handbook on how to evaluate the impacts of conservation and load management programs.

Accelerated Near-Term Conservation

Question: You have requested $1.5 million in FY 91 ($0 in FY 90) to conduct a campaign to increase the adoption of available conservation technologies (page 296). Can you elaborate on how this effort will differ from the ongoing technology transfer program in the Department?

Answer: The Department's ongoing technology transfer programs foster the adoption of DOE developed technologies by publishing research results, presenting research results at conferences, cost sharing the final stages of development and disseminating research results from specialized information centers when requests are received.

This new program would provide a very aggressive approach to reach a very large fragmented industry of widely dispersed decision makers and small firms with information on the performance of available technologies and practices for their application.

We will target the effort in four special areas. The first of these is development of an improved information exchange network which will pull together information from the specialized centers and researchers to meet individual information needs and requirements and to respond to requests from architects, builders, designers, vendors, and others. Conservation programs currently fund NATAS, CARIERS, and CADDET. If appropriate and dependable information about performance and energy benefits can be obtained quickly and easily at the time a decision is to be made, adoption of cost effective technologies could be accelerated.

The second area involves evaluation of impediments and dissemination of information on Energy Efficient Mortgages (EEM). EEMs provide incentives for improvement of homes' energy efficiency at time of sale. The effort will lead to a uniform program for all lenders, (Fannie Mae, Freddie Mac, FHA, and VA). The effort will seek a consensus for a single, streamlined program.

The third area is Home Energy Rating System (HERS). The HERS program complements the EEM program. It provides the tool for assessing energy efficiency that EEM practitioners need to run their programs. Uniform guidelines for EEM and HERS programs will help provide both the information and the incentives needed for builders, lenders, and realtors to use energy efficiency as another tool for more affordable housing.

In the fourth area, data on energy performance of retrofit technologies and practices will be collected, analyzed and the information disseminated to HUD Federally-assisted housing and DOE State Weatherization Offices. Training guidelines and operation and maintenance manuals will be prepared for Federally-assisted, low-income and weatherization assistance programs.

Question: Do you feel there are shortcomings in the ongoing technology transfer program?

Answer: The current program focuses on transferring technologies developed by BCS research programs to the private sector for commercialization and on disseminating technical results and information to others interested in the research. It does not focus on accelerating the adoption of technologies and practices already developed or developed by someone other than BCS.

Federal Energy Management Program

Question: We have another major initiative proposing to develop cooperative agreements between Federal agencies and the private sector to install and operate advanced state-of-the-art energy equipment. According to DOE figures, this could reduce the federal lighting bill by $930 million annually. Under these agreements, the private sector would finance the installation, operation, and maintenance of the equipment. The DOE would install, monitor and evaluate the equipment, and the host agency would provide the facility and any necessary modifications to the facility. What is the energy savings potential of this proposal?

Answer: DOE estimates indicate that Federal agencies currently use 0.8 quad of energy per year for Federal buildings with approximately 25% (or 0.2 quad) of the total estimated to be for lighting of facilities. The energy savings potential is anticipated to be up to 25% of the energy used for lighting or .05 quad.

Question: What are the costs and types of modifications you feel will be necessary at these facilities?

Answer: To achieve the full energy savings potential in all Federal buildings, a number of technologies will be needed. We expect that the types of modification could include use of high efficiency ballasts, dimming controls including daylight photo sensors, specular reflectors and high efficiency lamps. The cost to the Federal government will vary depending on the current lighting systems in place in the Federal building stock. Since lighting retrofits tend to have short term pay back of 1-3 years, it is expected that the Federal cost of installation could be minimized through the use of shared energy savings contracts or utility demand side management programs.

Question: Have you identified building candidates? If so, how were they selected?

Answer: To implement the lighting initiative we envision a 2 phase process. The first phase will involve the selection of Federal buildings in the Washington, D.C. area. DOE is coordinating efforts with the General Services Administration, the Department of Defense and other appropriate agencies. These agencies will comprise a working group of the Interagency Energy Management Task Force and will develop criteria for the selection of candidate buildings. The second phase of the initiative would provide for the installation and evaluation of the lighting projects and the subsequent transfer of project results to other Federal agencies.

Question: How successful has this type of effort been in the private sector?

Answer: We believe that this initiative represents a significant innovation, because of the size and diversity of the Federal building stock, which is well suited to the Federal government. To our knowledge no comparable private sector initiative of this scope has been conducted. Individual private sector lighting retrofits have been shown to be cost effective.

Industrial Programs

Question: Congress provided an additional $17 million in fiscal year 1990 for what is commonly known as "the metals initiative." The objective of work in this program is to develop technologies for reducing energy consumption and increasing productivity in the processing of major basic products and materials (pg. 323 and 327). This initiative has a long funding history dating back to fiscal year 1986. Subsequent appropriations were made until fiscal year 1989, when it became clear that there continued to be a slow spend out rate for the program and substantial carryover balance existed. During fiscal year 1989, it appeared that the program was back on track and ready for additional funds. Your efforts to keep the program moving forward appear to be meeting with success, and about 75 percent of the funds have been obligated. Please comment on the renewed efforts to move this project forward.

Answer: DOE has been actively involved in efforts to move the Metals Initiative program forward. Networking activities initiated under the Steel Initiative program have continued. DOE has visited all the major aluminum companies, made contact with copper industry representatives, and contacted personnel in universities, National Laboratories, the Bureau of Mines, the National Institute of Standards and Technology and other research entities. Contacts with the steel industry have also been maintained. In the near future, DOE anticipates publishing solicitations for applications concentrating on areas identified in the Metals Initiative Research Plan. Notice of the availability of these solicitations for financial assistance will be publicized in the Commerce Business Daily and Federal Register. Also, in September 1989, DOE mailed over 600 copies of the Metals Initiative Research and Management Plans to personnel in the steel, aluminum, and copper industries, labor organizations, National Laboratories, universities, and other research organizations, independent consultants and other interested parties. These actions should promote the development of proposals consistent with the purposes and objectives of the Act and reflect the priorities established in the Research Plan.

Question: Will the 30 percent cost share slow things down in fiscal year 1991?

Answer: No. The 30 percent cost-share requirement is not expected to be an impediment to program progress in FY 1991.

Question: Please provide for the record in detail what could be accomplished in fiscal year 1991 if funds beyond the budget request of $8.6 million were provided.

Answer: The funds requested in the FY 1991 budget, $8.6 million, will be used to continue the AISI direct steelmaking project ($6.0 million), complete Phase I of the spray casting project at the Idaho National Engineering Laboratory ($1.2 million) and most likely, initiate Phase II of the spray casting project ($1.4 million). If funds beyond the budget request are provided, they could be used for: (1) Phase IIB of the superplastic steel project at Lawrence Livermore National Laboratory ($1.5 million) assuming a decision that Federal funding is required and justified; (2) Continuation of new projects initiated with FY 1990 funds, (approximately $2.6 million - three proposals, excluding the proposal from Weirton Steel are currently being reviewed); and (3) Full funding for the first 12 months of Phase II of the spray casting project at the INEL (an additional $4.6 million) allowing the project to proceed without incurring a delay.

CFC Analysis and Research in Transportation

Question: The justification for the Transportation program indicates that no activities are planned for CFC analysis and research in FY 1991. Other related CFC research is proposed in the Buildings program in fiscal year 1991. In fiscal year 1990, $600,000 was provided to conduct investigations on reduced cooling loads through window glazing, replacement of CFC fluids with flammable liquids, and reduction of CFC content for replacement refrigerants. What have you seen so far in fiscal year 1990, in this research, that merits elimination of the program?

Answer: The investigations on reducing or eliminating the use of CFC refrigerants in automotive air-conditioning systems are new initiatives which will be started in FY 1990. Until the investigations are complete, it is not clear that additional government support is necessary. The investigations will continue into FY 1991 using FY 1990 funds. Private industry is already making a serious commitment to addressing this issue, even without Federal funding.

Alcohol/Gaseous Fuels

Question: In the Alcohol/Gaseous Fuels program, you have requested a 144 percent increase for fiscal year 1991 ($1,680,000 in FY 1990; $4,100,000 in FY 1991). The justification indicates that you are proposing to initiate two new efforts. The first effort is designed to assess the concept of oxygen enrichment as a technology for increasing fuel efficiency and catalyst performance (page 355). The second effort is designed to initiate an assessment of catalyst technology designed for specific alternative fuels. Can you elaborate how you plan to proceed with these two efforts?

Answer: The first effort will assess the potential of oxygen enrichment as an emission control technology. It is planned to conduct engine tests with oxygen enrichment via membrane technology as a combustion enhancement mechanism and correlate the increased exhaust and catalyst temperatures with changes in emissions and performance. Both spark ignition and compression ignition engines will be investigated. The second effort will assess catalyst technology for application to specific alternative fuels. It is planned to conduct tests to determine feed parameters and catalyst materials that enhance methane oxidation for compressed natural gas, alcohol, and hydrocarbon fuels. Similar tests will be carried out to enhance aldehyde oxidation in the exhaust for methanol fuels.

Question: Please break down the amount of funding you anticipate spending on each type of alternative fuels.

Answer: Since almost all of the work proposed will involve all of the alternative fuels, it is difficult to estimate an overall breakdown of spending on each type. The technology development areas will probably split evenly between alcohol fuels and compressed natural gas. In the demonstration area, funding in this early period of the program will probably be heavily oriented toward methanol since vehicles and fuels are more nearly ready, with natural gas a close second. Ethanol will receive the least funding in the beginning since very few demonstrations are planned at the present time. As vehicles become available and additional demonstration activities are formulated, every attempt will be made to equally distribute funding so each fuel/engine combination is accurately and fairly evaluated.

Synthetic Fuels

Question: The budget requests $900,000 in fiscal year 1991 to continue operation of the synthetic test fuels production facility at Southwest Research Institute. This is the only supplier of controlled test synthetic fuels to the scientific community (page 356). Are there other suppliers outside the scientific community?

Answer: The funding requested in FY 1991 to continue operation of the synthetic test fuels production facility at Southwest Research Institute under the Synthetic Fuels activity is actually $250,000. There are no other suppliers available to the scientific community.

Question: What is the purpose of this facility?

Answer: The purpose of the facility is to formulate test quantities of controlled synthetic fuels from nonpetroleum feed stocks for use by scientists in industry and government laboratories.

Question: What are the limitations of this facility?

Answer: The facility can only formulate small quantities of fuel. However, that is also its unique advantage. Almost any industrial refinery could formulate synthetic fuels in quantities of thousands of barrels, but researchers require very small quantities which this facility was designed to produce. The real limitation of the facility at the present time is the greatly reduced interest in synthetic fuels in the scientific community, and therefore a decreased utilization of the facility's capabilities. Investigations are underway on the feasibility of transferring responsibility for operation of the facility entirely to Southwest Research Institute.

Alternative Motor Fuels Demonstration

Question: You are proposing to establish cooperative efforts with State and local authorities on a demonstration of alternative motor fuels. So far, most activities have been on the federal side. How will you select the State and local authorities?

Answer: At the present time most of the demonstration activities underway on alternative motor fuels are actually being conducted by State and local authorities. California has a large number of demonstrations underway or planned. New York and Colorado have both light duty and heavy duty demonstrations underway, and a great number of local communities are evaluating school and transit bus fleets or light duty service fleets. Many of these authorities have already been contacted, and every one has agreed to cooperate in any way possible. It is planned to select agencies for cooperation based on many factors such as availability of established alternative fuels infrastructure, location, type of engine/vehicles being demonstrated, type of fuel being used, willingness to collect and provide required data, and support required.

Question: What type, if any, of incentives will you give to State and local authorities to participate?

Answer: Almost none of the demonstrations now underway, particularly in the case of buses and heavy duty vehicles, include the collection of emissions data. Because of today's environmental concerns emissions data is of vital importance to a conclusive evaluation. Under the Alternative Motor Fuels Demonstration, facilities are being prepared and data collection protocols formulated in cooperation with the Environmental Protection Agency to enable us to add this important ingredient to the demonstrations. In addition to providing emissions data, financial support will be provided for additional data collection. If required, a standardized data collection methodology will be formulated to allow interchange of data and results, technical and training support will be available, and we will serve as a focused interface with both vehicle/engine manufacturers and fuel suppliers.

Question: In fiscal year 1990, you intend to initiate a cooperative effort with DOT/UMTA to assist government agencies in the testing of alcohol- and natural gas-fueled bus vehicles. You have proposed to continue this effort in fiscal year 1991 and to expand it, and to use new refueling and/or engine types (page 357). With the expansion of this program is an expansion of the budget from $690,000 in fiscal year 1990 to $1,600,000 in fiscal year 1991. What is the status of the FY 1990 efforts to initiate this program?

Answer: An interagency agreement has been formalized with DOT/UMTA to utilize the alternative fueled transit bus fleets being supported by UMTA for data collection and evaluation. The major funding requirement under the Alternative Motor Fuels Act will be in the collection of emissions data. The present capabilities available for heavy duty engine transient emissions tests would require removing engines from the vehicles and shipping to a limited number of test laboratories, conducting tests, and then reshipping and reinstalling. From an operational standpoint, this situation would be unacceptable to transit authorities. The transportable emissions vehicle dynamometer test equipment being developed by West Virginia University for heavy duty applications will solve that problem. The transient emissions protocol has been approved by the Environmental Protection Agency and the data collection methodology is being integrated with the UMTA data acquisition.

Question: Can you elaborate on the expansion of this program? Refueling types? Engine types?

Answer: Presently we have identified existing or planned demonstration activities which use methanol, compressed natural gas, and ethanol. Through contacts with transit authorities, engine manufacturers, fuel suppliers, trade associations, and DOT/UMTA it is clear that in FY 1991 the matrix of available fuel type/engine type combinations will greatly expand. It is expected that at least the following combinations will be demonstrated: for methanol, both spark and compression ignition dedicated engines with and without catalysts; for ethanol, both spark and compression ignition dedicated engines without catalysts; and for compressed natural gas, both spark and compression ignition dedicated and dual engines using both fuel injection and fumigation techniques. It is estimated that 200 emissions tests may be required in FY 1991 to provide adequate sampling of the various alternative fueled vehicles being demonstrated.

Electric Vehicle Battery R&D

Question: I can't help but note that the Administration's overall request for Energy Conservation R&D is twice as large in fiscal year 1991 as it was in fiscal year 1990. Yet you are proposing to nearly eliminate battery research and focus on the top three candidates. How will you select the top three candidates?

Answer: In the selection of the top three candidates for battery R&D for electric vehicles it was concluded that the efforts were diffused over too many battery options. Sodium-sulfur, lithium-metal sulfide, and zinc-bromine were selected as the couples most likely to be viable candidates because of their performance characteristics such as energy power and cycle life and their potential for cost reduction along with the commitment from industry to commercialize these battery types as the market for electric vehicles expands over the next several years.

Question: How much carryover balance is available?

Answer: There will be no FY 1990 carryover funds available to conduct battery work during FY 1991.

Question: Are you planning to turn the other batteries over to industry? If so, why are you proposing a decrease in the amount of funding for technology transfer?

Answer: Since industry has directly participated in the R&D activities associated with these battery technologies and patent waivers have been granted to the industry contractors, the technology already rests within the private sector. Therefore, no additional technology transfer is required.

Advanced Materials Development

Question: The goal of the Advanced Materials Development Program is to develop an industrial technology base in ceramics capable of providing reliable and cost-effective components for high temperature, high efficiency transportation propulsion systems (page 367). The proposed budget for fiscal year 1991 for this program is steady at $14 million. I would note, however, that you are proposing to shift emphasis from materials and processing (-20 percent) towards database and life prediction (+31 percent). Why the shift? Is this consistent with your five year plan?

Answer: The shift in emphasis is a normal result of the planned activities under the Advanced Materials Development program. As materials and processing technology is developed, the characterization and life prediction requirements increase to evaluate and identify characteristics for component designs. This shift is consistent with our five year plan.

Question: What research could be done if additional funds were provided for Materials and Processing?

Answer: The present Materials and Processing work is focused on the performance requirements for advanced engines and energy conversion systems where critical service requirements of high temperature and high stress will certainly add costs to finished products. However, the basic technology being developed will have application to a great number of more near-term systems such as current spark ignition and diesel engines. For these near-term applications there are significant energy and environmental benefits because of the lower mass, reduced friction, and increased resistance to wear and corrosion characteristics of ceramic materials. However, the cost factor for these applications are much more significant because of the less stringent performance requirements. Based on these factors and considerable inputs from industry on the need for such work, a new initiative is being investigated which would concentrate on materials and processing techniques which could greatly reduce the costs of ceramic components not requiring the performance characteristics of advanced components. The technology base already established would be utilized as a baseline and the program would investigate alternative processing parameters for areas such as process modeling, machining and finishing, raw materials, process equipment, yield improvement, forming, densification, and testing standards. A draft project plan is being prepared and, depending on reviews by industry and management, funding could be requested in the FY 1992 budget.

Multi-Sector: Energy Conversion and Utilization Technologies

Question: The Energy Conversion and Utilization Technologies Program request for FY 1991 proposes a 13 percent decrease from the FY 1990 enacted level. While there are small increases and decreases throughout the program, the majority of this decrease is proposed to come in the Materials Processing Technology program which is to decrease from $4,100,000 in fiscal year 1990 to $1,800,000 in fiscal year 1991. Since the Multi-Sector program focuses on emerging technologies, has the time come to move the majority of the materials processing research out of the Multi-Sector program and into the other programs?

Answer: The reduction in ECUT materials processing is due to scaling down of the investigations in this area as the results are picked up by the applied research programs in Industry and Transportation -- exactly the supportive process we expect to occur with fundamental research of this type. Meanwhile, we are reviewing selected areas of materials processing where major advances might be made and where, in the future, funding may be requested.

Multi-Sector: Global Warming Missions Remediation

Question: In Fiscal Year 1990, you initiated research on photo-bioreactors for carbon dioxide removal by microalgae. What is the status of this research, and has a selection been made?

Answer: A study on the current status of photobioreactors, their efficiency, and future development needs has been initiated, and will be carried out at Oak Ridge National Laboratory. Proposals for other methods of removal of carbon dioxide and methane, another "greenhouse gas," are being studied.

Question: How are you proposing to expand this research in fiscal year 1991?

Answer: We plan to initiate work on genetically engineered microalgae or other microorganisms to increase the efficiency of carbon dioxide removal from air and to obtain some organic compound as a byproduct -- one normally made from petroleum. Work will also be initiated to remove methane from air by the use of catalysts developed as part of a new national laboratory/private industry partnership in "catalysis-by-design."

Weatherization Assistance Program

Question: Again this year, you have not requested full funding for the Weatherization Assistance Program. Instead you have requested $5.0 million in FY 1991 to fund State proposals to test innovative approaches to low-income weatherization. Can you give us some examples of the innovations which may surface?

Answer: The innovations would be proposed by the States in response to a competitive solicitation. We have no way of knowing in advance that the full range of proposals, based on individual State experience and circumstances, might be. We do expect, however, that proposals would include:

o New approaches to home energy audits, e.g., new audit protocols, audits tailored to reflect energy savings potential and payback on the basis of individual buildings, household characteristics, and client behavior;

o Innovative approaches to client education;

o Model ways to coordinate service delivery across program lines, e.g., WAP, LIHEAP, and various HUD low-income housing efforts;

o New approaches (e.g., training centers, curricula) to training local subgrantee personnel;

o Field tests of buildings energy research results and conservation measures and combinations of measures, including those with applicability to specific climates or housing types; and

o New approaches to information sharing and technology transfer.

o An additional $10 million is requested to provide incentive grants to States based on non-government resources leveraged. The incentive fund is discussed in a subsequent question and answer.

Question: I understand the selections will be competitive, but what type of geographic distribution do you anticipate?

Answer: We would expect selection to be on the basis of overall excellence, program need and potential for replication. The last criterion should include consideration of the proposal's applicability to differences in geography, in climate, in housing stock, and in population characteristics. We do not anticipate that geographic distribution of recipients, per se, will be a criterion for awarding these grants.

Question: How have States responded to this proposal?

Answer: Although this proposal was contained in the DOE FY 1991 budget submission, there has been no State response to it specifically, as yet. However, as the grantees and subgrantees have become more experienced and professional, the interest in designing, testing, and sharing new approaches has increased. States have expressed considerable interest in all the examples cited in the answer to the previous question.

Question: You have also requested $10 million in fiscal year 1991 as a leveraging initiative to generate $20 - $30 million from non-governmental sources (utility and private sector funds). These funds will be used to increase the number of homes weatherized by 15,000 to 20,000. Is this leveraging proposal similar to the leveraging proposal you have in the Federal Energy Management Program where you intend to develop cooperative agreements between Federal agencies and the private sector to install and operate advanced state-of-the-art energy equipment?

Answer: No, this initiative is not similar to the Federal Energy Management Program proposal. The intent of the Weatherization initiative is to identify--and bring to bear--non-government resources to supplement traditional funding sources (DOE appropriations, petroleum violation escrow monies, and transfers from LIHEAP block grants).

Funds leveraged from non-governmental sources would be channeled through the WAP delivery system to increase the number of homes weatherized annually. Incentive funds would be awarded to States (on a one-to-two or one-to-three match) based on the amount of non-governmental funding each applicant leveraged. Incentive and leveraged monies would be used for weatherization of low-income homes in the same fashion as appropriated funds.

Question: How would the cost per home compare under this proposal to the current program?

Answer: This proposal is neutral in terms of cost per home. The increase in number of homes weatherized annually would be the result of additional funds available and not of a decrease in per unit cost. However, because of the leveraging, three of four times as many homes will be weatherized for the Federally appropriated $10 million than would be the case if that $10 million were used for traditional program grants.

QUESTIONS SUBMITTED BY SENATOR PATRICK J. LEAHY

Weatherization Assistance Program

Question: I am most distressed with the treatment of the State and Local Assistance (Weatherization) Program of the Department of Energy in the President's budget. Since the Administration proposes to virtually eliminate the current program, how does the Department propose that the States will make up the difference, given that demand is rising in many States, due to sharply higher fuel prices this winter?

Answer: The States have sufficient uncommitted oil overcharge funds to support these programs. It should also be remembered that, in many cases, oil overcharge funds committed by the States have not yet been expended and so are still available to support the State's conservation programs.

Question: In past years, the Department has argued that the States could use Oil Overcharge funds to make up for federal cuts in the State and Local Assistance Programs. It is my understanding that much of these Overcharge monies have been spent by the States and that, most important, those monies were targeted by court settlements to "supplement, not supplant" federal funding for programs such as Weatherization Assistance. Is the Department aware of this situation and, if so, why does it propose to cut the FY 1991 program by almost 90 percent?

Answer: Appropriation of funds is a separate issue from the availability of oil overcharge funds. Appropriations are subject to the necessary budgetary restraints being applied to other federal programs. While proposing reduced federal funding for these programs, DOE will continue to work with the States to encourage efforts to attract non-federal resources to these programs.

Question: The DOE Weatherization program has been at the heart of a large national investment in weatherizing the homes of lower income people. In my home State, Oil Overcharge funds are almost depleted. What sources for making up the difference caused by a loss of DOE funding would the Department recommend?

Answer: Currently several utilities have active low-income weatherization programs. DOE believes that significant contributions can be made from utility programs, owners of rental properties eligible for weatherization and fuel fund programs established by States. Other avenues may be identified through the incentive fund proposed by the Department in the FY 1991 budget request.

Question: A budget document from the Department states that "A total of $15 million is requested to stimulate innovative programmatic approaches and to leverage non-governmental funding sources" in the Weatherization area. Can you describe for me in some detail the "innovative programmatic approaches" that some States are apparently employing, and identify some of the "non-governmental funding sources" of consequence that various States have tapped for Weatherization?

Answer: The innovations would be proposed by the States in response to a competitive solicitation. We have no way of knowing in advance what the full range of proposals, based on individual State experience and circumstances, might be. We do expect, however, that proposals would include:

- New approaches to home energy audits, e.g., new audit protocols, audits tailored to reflect energy savings potential and payback on the basis of individual buildings, household characteristics, and client behavior;
- Innovative approaches to client education;
- Model ways to coordinate service delivery across program lines, e.g., WAP, LIHEAP, and various HUD low-income housing efforts;
- New approaches (e.g., training centers, curricula) to training local subgrantee personnel;
- Field tests of buildings energy research results and conservation measures and combinations of measures, including those with applicability to specific climates or housing types; and
- New approaches to information sharing and technology transfer.

With respect to "non-governmental funding sources" States have tapped for weatherization, these include utility programs, contributions from owners of rental properties eligible for weatherization and fuel fund programs established by States.

Question: Recently, I was pleased to hear Dr. D. Allan Bromley, the President's science advisor, speak of the need for an aggressive national energy conservation policy as a step toward stabilizing the global climate change situation. I see an inconsistency between the Administration's support of energy conservation, and its refusal to invest in home weatherization to produce energy savings. Can you explain this seeming inconsistency? Is the Administration forgetting low-income Americans--the people most hurt by the proposed elimination of Weatherization Assistance--by turning away from a initiative that both conserves energy and frees up some of the meager financial resources of the poor? Is global climate change policy, in practice, going to mean only expensive new technologies that low and moderate income Americans cannot afford?

Answer: We do not believe there is an inconsistency. The Department has requested $212.6 million for energy conservation in FY 1991 which is 223 percent over the FY 1990 request and 10 percent over the FY 1990 appropriation. It is a budget which is attentive to future market needs and opportunities; which is responsive to energy, economic, and environmental goals; which is balanced by end use and time frame of delivery; and which will serve as a catalyst for progress in the private sector. This budget considers the needs of low-income citizens as well.

We are asking $15 million for a Weatherization Assistance Program incentive fund, substantially less than the amount appropriated in recent years. However, in that time the States have received more than $3.5 billion in restitutionary funds from petroleum overcharge violations; more than half of these funds remain unexpended. In every one of the 50 States, the amount of funds that remains unexpended exceeds the total of the State's DOE grants (including weatherization) for the current fiscal year, and in all but two States, the amount remaining is twice the total of the DOE grants. Thus, the DOE FY 1991 budget request assumes that States can use these monies to fund energy conservation grant activities if they so choose.

Least-Cost Utility Planning

Question: In 1989, the Department announced awards totalling $700,000 in funding for a demand-based conservation demonstration program for rural Northeastern utilities. Vermont utilities were among the successful applicants. Can you report to me on the status of the projects that I assume are now underway?

Answer: Nine grants have been awarded to fund demonstrations of a variety of least-cost utility planning activities in the northeastern region of the country. A review and management meeting is scheduled for March 29, 1990, in Boston, Massachusetts, at which each grantee will report on progress and accomplishments to date. Following that meeting, we will provide you with an up-to-date status report.

Question: If the results of the demonstration projects are useful, does the Department have plans for a longer term initiative in the area of demand-based residential and commercial conservation? If so, how would you characterize these plans.

Answer: The solicitation for proposals from northeastern utilities was the second we have issued under the LCUP program. The first one, issued in FY 1987, was not geographically limited. Projects selected under that solicitation have proven to be very successful. We believe that research and demonstration projects cost-shared with industry are essential elements of the LCUP program and plan to issue a new solicitation in FY 1990. Proposals will be solicited from utilities, state utility regulatory agencies and others. Proposals will be considered for a variety of topics including integrated resource planning for electric and gas utilities, transmission and distribution issues, fuel switching, regulatory reforms (e.g., evaluation and application of innovative rate incentives), load shifting programs, evaluation of demand reduction programs, consideration of environmental and other externalities, and information exchange and transfer. Successful candidates will be selected in FY 1991.

QUESTIONS SUBMITTED BY SENATOR PETE V. DOMENICI

Oil Overcharge Funds

Question: The FY 1987 budget resolution assumed and reconciled $1.7 billion in deficit reduction from the recovery of oil overcharge funds. Congress failed to enact legislation to recover these funds and the courts provided that these funds are distributed to the States. The States have generally not followed the federal government's priorities in allocating these oil overcharge funds. Particularly in the case of funds distributed under the Stripper Well court agreement, which gives the States wide latitude in the use of these funds, States have used these funds for other purposes than energy assistance, such as the construction of roads and bridges.

Mr. Davis, your testimony indicates that the States have received more than $3.5 billion in oil overcharge funds and that more than half of these funds remain unexpended. Does the Department anticipate that additional petroleum overcharge funds will be distributed to the States? If so, how much are you projecting in additional overcharge collections and how much will be paid to the States?

Answer: DOE estimates that the States will receive $600-$700 million in future oil overcharge distributions, 40 percent of the total settlements.

Question: How have States allocated oil overcharge funds?

Answer: The attached Table 1 provides that information on a State-by-State basis.

Question: How do States' allocation of oil overcharge funds compare with the federal government's allocation of LIHEAP and energy conservation grant appropriated funds?

Answer: The attached Table 2 provides information on that comparison on a State-by-State basis.

TABLE 1

State Allocations of Oil Overcharge Funds

STATE	EXXON FUNDS RECEIVED(1)	STRIPPER WELL FUNDS RECEIVED	TOTAL AVAILABLE	SECP ALLOCATED	EES ALLOCATED	ICP ALLOCATED	WAP ALLOCATED	LIHEAP ALLOCATED	"OTHER" ALLOCATED(2)	TOTAL ALLOCATED
ALABAMA	$36,968,964	$18,990,824	$55,959,788	$7,419,984	$3,877,900	$12,532,493	$5,852,338	$7,779,465	$14,030,000	$51,492,180
ALASKA	$9,606,689	$4,788,520	$14,395,209	$3,384,805	$2,033,078	$900,000	$7,175,000	$0	$0	$13,492,883
AMERICAN SAMOA	$402,921	$220,417	$623,338	$530,000	$0	$0	$0	$59,643	$0	$589,643
ARIZONA (3)	$26,501,622	$12,694,662	$39,196,284	$16,299,279	$886,000	$1,500,000	$4,050,000	$1,600,000	$9,053,000	$33,388,279
ARKANSAS	$29,239,400	$15,749,197	$44,988,597	$3,396,635	$6,440	$20,005,790	$5,696,858	$5,080,000	$8,379,127	$42,564,850
CALIFORNIA	$219,817,035	$113,293,455	$333,110,490	$129,474,000	$15,000,000	$0	$0	$76,365,000	$133,970,950	$354,809,950
COLORADO	$26,457,318	$13,306,875	$39,764,193	$23,470,504	$0	$0	$5,554,476	$0	$7,850,056	$36,875,036
CONNECTICUT	$40,753,521	$21,017,320	$61,770,841	$6,500,074	$3,400,000	$2,950,723	$1,000,000	$36,516,704	$9,860,000	$60,227,501
DELAWARE	$12,079,664	$5,875,753	$17,955,417	$213,182	$52,160	$6,473,334	$5,350,000	$346,827	$1,573,750	$14,009,253
DIST COLUMBIA	$5,321,143	$2,956,306	$8,277,449	$2,292,885	$835,000	$400,000	$1,452,841	$2,106,140	$114,498	$7,201,364
FLORIDA	$117,935,881	$57,180,014	$175,115,895	$60,000,000	$2,000,000	$88,000,000	$19,467,044	$0	$24,083,592	$193,550,636
GEORGIA	$52,927,362	$27,559,563	$80,486,925	$2,065,500	$4,158,649	$16,200,000	$13,908,250	$28,679,508	$15,157,625	$80,169,532
GUAM	$3,693,865	$1,823,812	$5,517,677	$305,214	$65,029	$0	$0	$0	$0	$370,243
HAWAII	$15,705,185	$8,503,262	$24,208,447	$8,500,000	$1,630,000	$4,250,000	$4,000,000	$0	$0	$18,380,000
IDAHO	$10,518,741	$5,079,253	$15,597,994	$4,200,000	$0	$1,800,000	$3,537,474	$0	$3,381,182	$12,918,656
ILLINOIS	$114,048,706	$56,843,661	$170,892,367	$13,200,000	$0	$0	$69,950,000	$51,500,000	$31,643,000	$166,293,000
INDIANA	$57,354,627	$30,484,421	$87,839,048	$8,860,000	$10,400,000	$412,212	$15,954,532	$34,682,588	$20,103,410	$90,412,742
IOWA	$31,860,780	$16,125,432	$47,986,212	$13,010,000	$24,072,834	$0	$7,769,395	$5,400,000	$2,780,000	$53,032,229
KANSAS	$25,458,453	$13,873,565	$39,332,018	$3,126,713	$920,000	$5,999,227	$2,126,955	$13,240,152	$2,676,397	$28,089,444
KENTUCKY	$28,687,513	$15,864,006	$44,551,519	$0	$0	$0	$7,650,094	$15,818,191	$0	$23,468,285
LOUISIANA	$55,728,713	$29,437,164	$85,165,877	$7,624,000	$2,376,000	$30,000,000	$11,536,267	$0	$21,595,021	$73,131,288
MAINE	$16,260,346	$9,097,842	$25,358,188	$7,689,996	$1,386,230	$1,621,038	$10,725,000	$2,000,000	$505,000	$23,927,264
MARYLAND	$41,498,271	$22,158,756	$63,657,027	$1,853,678	$7,843,596	$3,000,000	$35,065,300	$9,919,000	$4,422,636	$62,104,210
MASSACHUSETTS	$81,834,052	$42,365,815	$124,199,867	$35,067,679	$0	$2,000,000	$45,400,000	$32,422,954	$6,700,000	$121,590,633
MICHIGAN	$79,978,783	$42,167,758	$122,146,541	$20,183,000	$0	$0	$16,715,757	$66,769,027	$19,268,259	$122,936,043
MINNESOTA	$42,184,711	$21,475,586	$63,660,297	$29,221,217	$4,355,448	$0	$14,229,916	$5,743,753	$12,036,700	$65,587,034
MISSISSIPPI	$31,016,081	$16,899,754	$47,915,835	$12,374,248	$862,363	$17,570,000	$8,950,000	$3,000,030	$3,422,000	$46,178,641
MISSOURI	$47,976,700	$24,435,682	$72,412,382	$15,020,338	$554,773	$12,644,750	$20,963,976	$5,679,183	$11,666,797	$66,529,817
MONTANA	$10,699,205	$5,601,550	$16,300,755	$3,787,440	$537,862	$1,888,957	$7,696,000	$1,750,000	$3,698,941	$19,359,200
NEBRASKA	$19,028,437	$9,126,261	$28,154,698	$12,887,589	$1,724,861	$1,900,000	$4,280,000	$0	$3,300,000	$24,092,450
NEVADA	$10,058,167	$5,012,913	$15,071,080	$1,611,750	$1,919,018	$215,077	$3,932,842	$6,054,695	$4,769,336	$18,502,718
NEW HAMPSHIRE	$11,679,796	$5,767,971	$17,447,767	$7,280,714	$4,241,568	$500,000	$2,332,170	$1,689,543	$1,059,301	$17,103,296
NEW JERSEY	$81,917,249	$45,685,059	$127,602,308	$4,000,000	$0	$21,226,535	$13,500,000	$48,925,000	$15,850,000	$103,501,535
NEW MEXICO	$16,450,322	$8,106,942	$24,557,264	$14,244,959	$1,936,226	$8,376,922	$5,564,567	$3,096,600	$3,152,406	$36,371,680
NEW YORK	$175,279,671	$95,832,060	$271,111,731	$74,879,203	$17,502,828	$39,533,529	$46,354,134	$25,069,468	$46,250,000	$249,589,162
NO MARIANAS	$215,625	$114,011	$329,636	$200,000	$0	$0	$0	$0	$25,275	$225,275
NORTH CAROLINA	$59,168,996	$27,777,127	$86,946,123	$7,879,399	$1,460,348	$7,500,000	$10,600,000	$10,640,000	$23,791,763	$61,871,510
NORTH DAKOTA	$9,029,424	$4,536,112	$13,565,536	$1,655,536	$128,017	$2,718,000	$2,382,595	$3,800,000	$4,500,000	$15,184,148
OHIO	$97,549,730	$46,504,358	$144,054,088	$10,500,000	$2,321,389	$4,519,052	$65,401,669	$15,400,000	$27,872,457	$126,014,567
OKLAHOMA	$30,086,495	$15,284,934	$45,371,429	$11,789,419	$2,027,780	$4,000,000	$7,618,000	$7,216,389	$12,882,376	$45,533,964

State Allocations of Oil Overcharge Funds

STATE	EXXON FUNDS RECEIVED(1)	STRIPPER WELL FUNDS RECEIVED	TOTAL AVAILABLE	SECP ALLOCATED	EES ALLOCATED	ICP ALLOCATED	WAP ALLOCATED	LIHEAP ALLOCATED	"OTHER" ALLOCATED(2)	TOTAL ALLOCATED
OREGON	$23,273,517	$12,267,458	$35,540,975	$5,340,000	$611,900	$0	$16,136,512	$238,418	$11,084,319	$33,411,149
PENNSYLVANIA	$109,710,005	$57,622,463	$167,332,468	$8,518,000	$3,070,147	$10,259,143	$10,910,000	$76,460,000	$8,474,000	$117,691,290
PUERTO RICO	$21,241,221	$11,789,879	$33,031,100	$97,967	$381,958	$7,850,000	$0	$20,000,000	$4,500,000	$32,829,925
RHODE ISL (4)	$9,601,889	$4,906,851	$14,508,740	$6,267,000	$1,518,580	$1,983,000	$1,484,696	$2,440,000	$340,822	$14,034,098
SOUTH CAROLINA	$30,067,252	$14,754,432	$44,821,684	$10,825,280	$8,051,031	$8,344,000	$74,000	$8,943,000	$5,113,652	$41,350,963
SOUTH DAKOTA	$8,760,302	$4,425,118	$13,185,420	$5,881,750	$410,000	$1,000,000	$1,000,000	$1,272,771	$3,048,376	$12,612,897
TENNESSEE	$38,681,680	$20,024,507	$58,706,187	$6,628,759	$1,230,189	$10,000,000	$20,250,000	$3,500,000	$2,600,000	$44,208,948
TEXAS	$187,541,153	$91,304,059	$278,845,212	$127,688,198	$9,016,000	$8,460,823	$14,250,000	$31,459,000	$72,104,082	$262,978,103
UTAH	$15,226,884	$7,301,135	$22,528,019	$5,275,000	$415,000	$1,750,000	$5,500,000	$0	$4,865,000	$17,805,000
VERMONT	$5,898,194	$2,962,008	$8,860,202	$2,420,000	$0	$0	$3,550,000	$1,165,000	$252,400	$7,387,400
VIRGIN ISLANDS	$9,951,205	$5,724,877	$15,676,082	$5,951,205	$874,000	$2,000,000	$0	$500,000	$4,665,000	$13,990,205
VIRGINIA	$64,489,765	$31,762,025	$96,251,790	$7,036,126	$832,219	$3,000,000	$35,722,921	$17,106,793	$7,411,022	$71,109,081
WASHINGTON	$36,356,910	$18,899,428	$55,256,338	$19,005,612	$700,000	$0	$15,815,079	$4,256,080	$13,018,774	$52,795,545
WEST VIRGINIA	$15,774,249	$7,396,366	$23,170,615	$3,068,922	$449,960	$662,183	$5,390,000	$7,398,692	$5,874,136	$22,843,893
WISCONSIN	$44,583,127	$21,775,035	$66,358,162	$5,264,244	$2,000,000	$1,155,059	$44,583,127	$29,984,127	$7,500,000	$90,486,557
WYOMING	$10,839,887	$5,046,709	$15,886,596	$6,200,000	$70,000	$2,000,000	$2,262,500	$150,000	$990,000	$11,672,500
TOTAL	$2,414,977,404	$1,237,580,323	$3,652,557,727	$811,467,003	$150,146,381	$379,101,847	$690,672,285	$733,223,741	$663,266,438	$3,427,877,695

(1) Includes interest earned
(2) Stripper Well funds only
(3) Rhode Island's EES figures include some LIHEAP funds.
(4) Arizona has also paid $683,003 to the Navaho Nation

TABLE 2

Percentage of Funds Distribution -- Federal vs. PVE Funds

STATE	SECP		EES		ICP		WAP		LIHEAP		"OTHER"
	FED	PVE	FED	PVE	FED	PVE	FED	PVE	FED	PVE	PVE
ALABAMA	1.1%	14.4%	0.5%	7.5%	2.5%	24.3%	10.7%	11.4%	84.7%	15.1%	27.2%
ALASKA	0.6%	25.1%	0.4%	15.1%	1.5%	6.7%	14.7%	53.2%	82.2%	0.0%	0.0%
AMERICAN SAMOA	21.4%	89.9%	17.8%	0.0%	42.6%	0.0%	0.0%	0.0%	16.1%	10.1%	0.0%
ARIZONA	1.7%	48.8%	0.8%	2.7%	4.1%	4.5%	8.7%	12.1%	84.1%	4.8%	27.1%
ARKANSAS	1.3%	8.0%	0.5%	0.0%	2.3%	47.0%	12.3%	13.4%	83.1%	11.9%	19.7%
CALIFORNIA	0.9%	36.5%	0.3%	4.2%	1.8%	0.0%	5.6%	0.0%	91.1%	21.5%	37.8%
COLORADO	0.5%	63.6%	0.2%	0.0%	1.5%	0.0%	13.1%	15.1%	84.2%	0.0%	21.3%
CONNECTICUT	0.4%	10.8%	0.2%	5.6%	1.2%	4.9%	6.7%	1.7%	91.1%	60.6%	16.4%
DELAWARE	1.3%	1.5%	0.8%	0.4%	2.7%	46.2%	10.7%	38.2%	83.9%	2.5%	11.2%
DIST OF COLUMBIA	1.1%	31.8%	0.7%	11.6%	2.4%	5.6%	10.8%	20.2%	84.5%	29.2%	1.6%
FLORIDA	1.4%	31.0%	0.6%	1.0%	3.3%	45.5%	3.1%	10.1%	91.4%	0.0%	12.4%
GEORGIA	1.1%	2.6%	0.5%	5.2%	2.6%	20.2%	9.6%	17.3%	85.8%	35.8%	18.9%
GUAM	17.9%	82.4%	14.5%	17.6%	36.8%	0.0%	0.0%	0.0%	28.4%	0.0%	0.0%
HAWAII	3.3%	46.2%	2.2%	8.9%	6.8%	23.1%	8.9%	21.8%	78.1%	0.0%	0.0%
IDAHO	0.6%	32.5%	0.4%	0.0%	1.7%	13.9%	14.2%	27.4%	82.6%	0.0%	26.2%
ILLINOIS	0.4%	7.9%	0.1%	0.0%	1.4%	0.0%	10.3%	42.1%	87.3%	31.0%	19.0%
INDIANA	0.6%	9.8%	0.2%	11.5%	1.5%	0.5%	10.9%	17.6%	86.5%	38.4%	22.2%
IOWA	0.4%	24.5%	0.2%	45.4%	1.4%	0.0%	12.4%	14.7%	85.2%	10.2%	5.2%
KANSAS	1.0%	11.1%	0.4%	3.3%	2.1%	21.4%	12.3%	7.6%	83.7%	47.1%	9.5%
KENTUCKY	0.7%	0.0%	0.3%	0.0%	1.7%	0.0%	13.6%	32.6%	83.2%	67.4%	0.0%
LOUISIANA	1.8%	10.4%	0.5%	3.2%	2.5%	41.0%	5.6%	15.8%	89.3%	0.0%	29.5%
MAINE	0.3%	32.1%	0.2%	5.8%	1.0%	6.8%	11.6%	44.8%	86.4%	8.4%	2.1%
MARYLAND	0.7%	3.0%	0.3%	12.6%	1.8%	4.8%	8.1%	56.5%	88.9%	16.0%	7.1%
MASSACHUSETTS	0.3%	28.8%	0.1%	0.0%	1.0%	0.8%	8.0%	37.3%	90.2%	26.7%	5.5%
MICHIGAN	0.3%	16.4%	0.1%	0.0%	1.2%	0.0%	11.7%	13.6%	86.1%	54.3%	15.7%
MINNESOTA	0.3%	44.6%	0.1%	6.6%	1.0%	0.0%	12.0%	21.7%	86.1%	8.8%	18.4%
MISSISSIPPI	0.9%	26.8%	0.5%	1.9%	2.2%	38.0%	8.4%	19.4%	87.7%	6.5%	7.4%
MISSOURI	0.5%	22.6%	0.2%	0.8%	1.5%	19.0%	11.1%	31.5%	86.3%	8.5%	17.5%
MONTANA	0.5%	19.6%	0.3%	2.8%	1.4%	9.8%	14.2%	39.8%	82.9%	9.0%	19.1%
NEBRASKA	0.6%	53.5%	0.3%	7.2%	1.6%	7.9%	11.6%	17.8%	84.1%	0.0%	13.7%
NEVADA	2.0%	8.7%	1.2%	10.4%	4.4%	1.2%	13.1%	21.3%	78.7%	32.7%	25.8%
NEW HAMPSHIRE	0.5%	42.6%	0.3%	24.8%	1.5%	2.9%	10.2%	13.6%	86.9%	9.9%	6.2%
NEW JERSEY	0.5%	3.9%	0.2%	0.0%	1.3%	20.5%	7.2%	13.0%	90.5%	47.3%	15.3%
NEW MEXICO	0.9%	39.2%	0.5%	5.3%	2.0%	23.0%	14.0%	15.3%	82.0%	8.5%	8.7%
NEW YORK	0.3%	30.0%	0.1%	7.0%	0.9%	15.8%	8.1%	18.6%	90.3%	10.0%	18.5%

Percentage of Funds Distribution -- Federal vs. PVE Funds

STATE	SECP FED	SECP PVE	EES FED	EES PVE	ICP FED	ICP PVE	WAP FED	WAP PVE	LIHEAP FED	LIHEAP PVE	"OTHER" PVE
NORTHERN MARIANAS	22.4%	88.8%	18.6%	0.0%	43.9%	0.0%	0.0%	0.0%	12.8%	0.0%	11.2%
NORTH CAROLINA	0.7%	12.7%	0.3%	2.4%	1.7%	12.1%	8.8%	17.1%	88.2%	17.2%	38.5%
NORTH DAKOTA	0.4%	10.9%	0.3%	0.8%	1.3%	17.9%	14.2%	15.7%	83.3%	25.0%	29.6%
OHIO	0.5%	8.3%	0.2%	1.8%	1.4%	3.6%	10.9%	51.9%	86.7%	12.2%	22.1%
OKLAHOMA	1.1%	25.9%	0.4%	4.5%	2.4%	8.8%	12.1%	16.7%	83.4%	15.8%	28.3%
OREGON	0.7%	16.0%	0.3%	1.8%	1.4%	0.0%	10.2%	48.3%	87.0%	0.7%	33.2%
PENNSYLVANIA	0.3%	7.2%	0.1%	2.6%	1.2%	8.7%	9.8%	9.3%	88.3%	65.0%	7.2%
PUERTO RICO	4.6%	0.3%	2.8%	1.2%	14.4%	23.9%	0.0%	0.0%	77.4%	60.9%	13.7%
RHODE ISLAND	0.7%	44.7%	0.4%	10.8%	1.6%	14.1%	8.9%	10.6%	88.1%	17.4%	2.4%
SOUTH CAROLINA	1.1%	26.2%	0.5%	19.5%	2.6%	20.2%	9.2%	0.2%	86.1%	21.6%	12.4%
SOUTH DAKOTA	0.5%	46.6%	0.4%	3.3%	1.4%	7.9%	15.3%	7.9%	81.8%	10.1%	24.2%
TENNESSEE	0.8%	15.0%	0.3%	2.8%	1.9%	22.6%	12.5%	45.8%	83.9%	7.9%	5.9%
TEXAS	1.7%	48.6%	0.4%	3.4%	3.0%	3.2%	6.2%	5.4%	88.3%	12.0%	27.4%
TRUST TERR/PALAU	45.7%	0.0%	37.9%	0.0%	0.0%	0.0%	0.0%	0.0%	16.4%	0.0%	0.0%
UTAH	0.7%	29.6%	0.4%	2.3%	1.9%	9.8%	11.9%	30.9%	84.7%	0.0%	27.3%
VERMONT	0.6%	32.8%	0.4%	0.0%	1.5%	0.0%	11.2%	48.1%	85.8%	15.8%	3.4%
VIRGIN ISLANDS	20.3%	42.5%	14.8%	6.2%	15.1%	14.3%	0.0%	0.0%	27.3%	3.6%	33.3%
VIRGINIA	0.6%	9.9%	0.3%	1.2%	1.7%	4.2%	8.9%	50.2%	88.2%	24.1%	10.4%
WASHINGTON	0.4%	36.0%	0.2%	1.3%	1.3%	0.0%	9.9%	30.0%	87.8%	8.1%	24.7%
WEST VIRGINIA	0.8%	13.4%	0.3%	2.0%	1.6%	2.9%	14.0%	23.6%	82.6%	32.4%	25.7%
WISCONSIN	0.3%	5.8%	0.1%	2.2%	1.1%	1.3%	10.8%	49.3%	87.2%	33.1%	8.3%
WYOMING	1.2%	53.1%	0.7%	0.6%	2.5%	17.1%	14.7%	19.4%	80.1%	1.3%	8.5%

DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

STATEMENT OF DR. DALLAS PECK, DIRECTOR

ACCOMPANIED BY:

PETER F. BERMEL, ASSISTANT DIRECTOR FOR PROGRAMS
PHILIP COHEN, CHIEF HYDROLOGIST, WATER RESOURCES DIVISION
BENJAMIN A. MORGAN, CHIEF GEOLOGIST, GEOLOGIC DIVISION
LOWELL E. STARR, CHIEF, NATIONAL MAPPING DIVISION

BUDGET REQUEST

Senator REID. We're going to now turn to consideration of the fiscal year 1991 request of the U.S. Geological Survey. Dr. Peck, would you and your associates join us here at the table. Testifying in support of that request will be Dr. Dallas Peck, Director of the U.S. Geological Survey.

The U.S. Geological Survey's fiscal year 1991 request is $506,578,000, an increase of about 6 percent over the appropriated amount for fiscal year 1990. In addition, the administration is proposing an employment level of 7,343 FTE's, which is 11 less than the 1990 program.

Within the 1991 request for the Survey, increases total $60.1 million for a continuation of the advanced cartographic systems, for a startup of a full-scale national water quality assessment program, for an enhanced global change program, and for Secretary Lujan's initiatives. These increases are partially offset by reductions totaling $31.7 million, which represent lower production levels in the mapping area; reductions in the national water resources research and information systems Federal program, Federal/State cooperative programs, allotments to research institutes, and research grants; decreases in geologic research; and various efficiency measures.

Dr. Peck, we'll make your full statement a part of the record. If you would introduce your associates and then summarize your statement and then we'll have some questions.

INTRODUCTION OF ASSOCIATES

Dr. PECK. Thank you, Senator Reid.

With me today is Mr. Pete Bermel, who is the Assistant Director for Programs of the U.S. Geological Survey.

Our request this year is for funds to support the Geological Survey in its 112th year. We think it's a balanced proposal and it addresses the most pressing science needs of the Nation.

The major increases proposed are for advanced cartographic systems, global climate change, for national water quality assessment, for special initiatives involving education of minorities and women and for the evolution of sedimentary basins program.

The global change proposal incorporates a number of different elements of the global change program. As chairman of the Committee on Earth Science, Senator Reid, we propose an integrated program for global change involving seven science elements. The Geological Survey program addresses Earth system history, involving a study of gases from ice cores in the multithermal period of the Pleistocene, several million years ago.

Part of the program addresses the sensitivity of water systems to climate change and the relationship between hydrology and global climate models. And part of the increase addresses characterization of the land surface and land data systems.

In the National Mapping Program, we're requesting an increase, which is the 5th year of a series of increases, to modernize our mapping process. We provide maps for the whole 50 States, whereas the Defense Mapping Agency maps the rest of the world, and we're the backup to the Defense Mapping Agency during a national emergency.

There is an enormous requirement for up-to-date maps in this country and for digital data, the maps in digital form, as well as in line form. And this increase will allow us to increase our capacity in order to make the maps and the digits far more efficiently than we can at the present time.

We also play a lead role in coordinating the mapping requirements and the digital data needs of all the Federal agencies, and we're working very aggressively with the support of OMB to reach a new understanding with the other Federal agencies and also to work with State and local agencies to gather that data.

We are pleased to announce that this year, in calendar year 1990, we'll complete the primary mapping of the country, and that will allow us to address more attention to map revision.

In geology, we're requesting increases to support global change and also for the study of sedimentary basins, a fundamental program that will tie in with our assessment of specific categories like coal and oil and gas.

We're requesting a continuation at the enacted level of our volcano and earthquake program, minus the $12 million of extra funds that were provided by Congress following the Loma Prieta earthquake. We've been very busy studying that earthquake, Senator, and also conducting earthquake studies in several other regions of the country using the additional funds provided by Congress—both work in northern and southern California and in the central part of the country, as well as the Northwest.

Also, on December 14, Mount Redoubt in Alaska erupted and that's been a pretty disruptive volcanic eruption with respect to aircraft flights in and out of Anchorage. We have a modest program, in cooperation with the State where we've been working 24 hours a day to provide monitoring to the State for those ash eruptions.

We are also requesting funds for continuation at a reduced level of the coastal and wetlands study. We'll complete this year, the Louisiana Barrier Islands study.

We'll also complete in this year most of the high priority BLM wilderness area studies for mineral resource potential and we'll begin to focus more attention on long-range studies with the Forest Service and the BLM.

In water resources, I'm very pleased that we're proposing this year to convert from a pilot phase to an operational phase the national water quality assessment program. I think this will provide very useful information to State and local agencies and other Federal agencies on water quality problems and trends that will help State and local agencies resolve some of their major water quality problems.

We have had an increased emphasis on water quality the last few years, both through our co-op program and work on a reimbursable basis with other Federal agencies and this is an extension of those activities.

PREPARED STATEMENT

We intend that this program will determine the extent and severity of surface water and ground water contamination from pesticides, understand the effect of agriculture on water quality and determine the relative magnitude of point and nonpoint source pollution. Such information will assist State and local agencies to address those problems and, in the longer term, to provide an information base on water quality in the country.

I thank you, Mr. Chairman. I'm prepared to respond to questions.

[The statement follows:]

STATEMENT OF DR. DALLAS L. PECK

Good morning, Mr. Chairman and thank you for the opportunity to present to the subcommittee the budget request of the U.S. Geological Survey for Fiscal Year 1991. This funding request is for the 112th year as the Nation's principal earth science agency. The mission of the Geological Survey is to conduct research and resource appraisals, and to collect, analyze, and disseminate geologic, hydrologic, cartographic, and geographic data related to issues of national significance. We believe this request to be a balanced proposal which addresses the most urgent earth science issues facing our nation in the new decade and continues the important basic research and information dissemination mission of the Geological Survey.

For FY 1991, the budget request totals $506,578,000, an increase of $16,940,000 over the base level. The budget proposes program increases totaling $44,229,000 as well as several offsetting decreases which total $27,289,000. In this statement I would like to present to the Subcommittee the highlights of our FY 1991 request. A more detailed presentation of the program changes in the proposed budget are provided in the attachment to this statement.

SPECIAL INITIATIVES

In FY 1991, the budget includes a proposal to provide $1,679,000 to both create and emphasize opportunities for full participation by women and minorities in education and employment programs in the earth sciences. Working in cooperation with academic and other organizations, USGS will seek to improve curricula and enhance the knowledge and capabilities of teachers by providing training and research opportunities, developing teaching and demonstration materials, and through direct involvement of earth scientists in the educational process. Opportunities for greater involvement of women and minorities in all levels of the earth sciences will be expanded through a variety of outreach, affirmative action, recruitment, and education and training programs in both the scientific and management disciplines. The budget also includes increases to support the hundreds of volunteers who provide such a valuable additional human resource for the bureau, the Take Pride in America initiative, and the drug free work place.

GLOBAL CHANGE

The Geological Survey is the Department of the Interior's lead bureau in research in the phenomenon of global change. For FY 1991, the $28.2 million program includes proposed increases totaling $14.9 million to address a variety of earth science issues which are basic to achieving a better understanding of the factors that may indicate a change in the climate and other aspects of the planet. The USGS program integrates studies included in each of our program divisions and builds on the existing research expertise of the Bureau. Studies in the areas of ancient climate history, and in the past climates of arid and polar regions will help us better understand the consequences of past climate changes and to detect indicators of the onset of such changes. We will undertake biogeochemical studies (mainly analyses of the exchange of gases between the earth and atmosphere) and volcanic emissions studies to improve our understanding of the composition of the atmosphere and the contribution this makes to climate change, and we will investigate the sensitivity of water systems to changes in climate, carbon dioxide concentrations, and sea level. USGS will also enhance the design and development of global change data systems to locate, catalog, and make available data to the entire user community in standard formats. We also propose to begin land surface characterization research needed for global change and process modeling studies. Our proposed research has been reviewed by the Committee on Earth Science (CES) of the Office of Science and Technology Policy and will support the investigations being proposed by other agency members of the CES.

NATIONAL MAPPING

The request of $126,771,000 for the National Mapping Program is to provide a diversity of maps, digital cartographic data, remotely sensed data, and other geographic products and services. The request is a net increase of $15,266,000 from the FY 1990 enacted amount.

We are pleased that the budget enables us to continue the process of conversion to **the Advanced Cartographic Systems (ACS)**, which was first funded in FY 1986. In FY 1991 a requested increase of $14,500,000 will bring the capitalization phase of this nationally important program to the fully funded level thereby permitting the continued modernization of the Geological Survey's map production activities. One significant result of this modernization is that USGS will be much better able to provide land managers and policy officials at all levels of government the information needed for a wide variety of uses throughout the nation. The requirements for up-to-date digital and graphic map products continues to increase and demands for USGS technical support are also escalating. The ACS will provide an efficient and extremely cost effective production system that will enable the USGS to meet these growing requirements into the next century. The ACS is being developed in close cooperation with the Defense Mapping Agency and the Government derives significant cost savings as a result of this partnership. Hardware procurement, including computerized workstations and technically advanced digital scanning devises, as well as software, represents the majority of costs included in the program. But USGS benefits through the cooperative agreement with DMA by avoiding most of the equipment and software development costs. The system will also result in significant cost benefits both to customers and to the government in the future.

We are pleased to note that in FY 1990, the USGS will complete the initial primary mapping coverage of the Nation which will allow us to direct our map program toward the important issue of providing much needed up to date graphic and digital data and products to the nation. In addition, the USGS will extend its leadership role in coordinating federal civilian data requirements and in fostering standard data formats for cartographic and geographic data with the goal of ensuring that data can be made available to and used by the greatest possible numbers of customers.

A future major data management activity is the development of a land related Data and Information System to support the proposed National Aeronautics and Space Administration Earth Observing System. We have signed a Memorandum of Understanding with the National Aeronautics and Space Administration whereby the responsibility for handling the data from the EOS will be managed by our EROS Data Center. This is a very challenging task, which will require major advances in data management and storage technologies.

GEOLOGY

The Geological Survey conducts basic geologic research and provides information on mineral and energy resources, both onshore and offshore, and on geologic hazards. These activities continue to result in knowledge and information that improves our understanding of the components, structures, and processes of the Earth, leading to more intelligent uses of our nations natural resources. The FY 1991 request for these activities is $184,821,000, a decrease of $8,400,000 from the FY 1990 enacted appropriation.

An increase is proposed to enhance the USGS capability to develop detailed information identifying the types, locations, and quantities of available **energy resources** to assist land managers and policy officials in administering the federal domain. This information is important to and supports assessments of all energy programs. The program provides a framework of energy research information needed for the integration of commodity specific research and assessment activities in the oil and gas, coal, oil shale, and uranium/radon programs. The information is publicly available and is used by domestic energy suppliers, as well as energy and environmental researchers. It is also intended to be of assistance to the Department of Energy in developing a national energy strategy.

The budget includes a continuation of **earthquake and volcano program** research above the 1990 request level. Following the disastrous earthquake in the San Francisco Bay area in October of 1989, USGS was directed to undertake a series of studies of seismic hazards in California and elsewhere. Under the FY 1990 **Dire Emergency Supplemental to Meet the Needs of Natural Disasters of National Significance** (Public Law 101-130), the Congress provided $12 million to the Geological Survey. These funds are being used to undertake studies of the causes and effects of the Loma Prieta earthquake; to establish a center for earthquake studies in Southern California; upgrade seismic and geodetic instrumentation in the San Francisco bay area; and improve estimates of future earthquakes ($8 million); and to begin studies of seismicity of the New Madrid seismic zone which includes all or parts of several south central states; and to investigate the seismicity of other areas of the United States ($4 million). Planning of projects has begun in all of these areas and we expect to publish a great deal of needed information as a result of this work. In view of the one-time nature of the supplemental funds, emphasis in planning has been placed on 1-year studies and capital expenditures. The 1-year studies will allow documentation of the most important effects of the Loma Prieta earthquake, the initiation of efforts to understand the New Madrid seismic zone, and acquisition of some capital equipment for the Southern California Earthquake Center.

The principal lesson of the Loma Prieta earthquake has been to give the United States an appreciation for the impacts of a moderate to large earthquake occurring on the margins of a rather well prepared metropolis. From the scientific and technical points of view, some of the lessons learned to date include:

- the safety benefits realized from using reinforced masonry construction in areas subject to earthquakes and the enforcement of strict building codes;

- the importance of geologic site conditions on controlling the intensity of damage, both during ground shaking and ground failure even at large distances from the epicenter; and

- additional data that supports long-term seismicity forecasts.

All components of the program, i.e., regional monitoring and earthquake potential studies, prediction research, hazards assessments, data and information services, and engineering seismology are proposed to be continued at the FY 1990 appropriation level for FY 1991.

Following the eruption of the Mt. Redoubt Volcano in Alaska in December of 1989, USGS initiated a series of emergency response actions and studies that will develop information needed to help plan for and mitigate the effects of future eruptions. Work at the Alaska Volcano observatory will be continued in cooperation with the University of Alaska in FY 1991 at the FY 1990 appropriated level.

The FY 1991 budget enhances the USGS **wetlands research** program by continuing studies currently in progress in Louisiana and starting projects in several new areas. We have completed our study of the loss of land in the Louisiana Barrier Islands and final reports will be published documenting our findings. We will begin studies in diverse regions of the country to assess the geologic processes contributing to coastal wetlands loss and studies which focus on geochemical processes active in inland wetlands areas. These projects will provide a baseline for future comparison and to estimate the availability of constituents to the ecosystem.

USGS will extend the ongoing **geologic mapping program** by continuing cooperative efforts with states and improving coordination among federal, state, academic, and private sector producers and users. The geologic map is a primary research tool that conveys comprehensive, essential information about all aspects of the geologic setting. During FY 1990, a process will be developed to annually solicit information on map requirements from other federal agencies so that the highest priority needs can be identified and overlapping requirements can be coordinated. We are also undertaking a study of the costs and benefits derived from the program.

In FY 1990, **mineral resource surveys** will be completed in most high priority wilderness areas currently requested by the Bureau of Land Management. In FY 1991, the program will focus on minerals data for land management, planning for future wilderness area assessments, and providing important minerals information to policy officials and land managers, especially with respect to strategic and critical minerals. USGS scientists are pioneering the development and testing of new techniques to quantify undiscovered mineral resources throughout the country. We work closely with state geological surveys to coordinate our work in both the conterminous United States, Alaska, and Hawaii.

WATER RESOURCES INVESTIGATIONS

For FY 1991 we are requesting a total of $155,716,000 in appropriations for the Water Resources Programs of the Survey. Included in this amount are proposed increases totaling $11,000,000 for the National Water-Quality Assessment Program and $5,000,000 for Global Change Hydrology, as well as proposed decreases totaling

$13,526,000 associated with the Federal-State Cooperative Program, the Water Resources Research Institutes and Research Grants Programs, Clearinghouse activities, the Regional Aquifer-System Analysis Program (RASA), Nuclear Waste Research, and the Federal Data Collection Program. As the RASAprogram is completed, plans are to redirect the associated resources to assist in financing the NAWQA effort.

I am especially pleased to bring to this Subcommittee the Administration's request to begin implementing a National Water-Quality Assessment Program (NAWQA) in FY 1991. This request culminates a 5-year pilot effort during which time concepts for such a program were tested extensively in seven study areas across the country. Other Federal agencies, including the U.S. Environmental Protection Agency and the Department of Agriculture, and many State agencies, have participated actively in the design, conduct, and evaluation of these experiments through formal Coordinating Work Groups that have functioned at the national level and in association with each of the seven pilot studies. In addition, the National Academy of Sciences has conducted an independent evaluation of the pilot program and has stated, in their preliminary report, that "a national-scale, long-term water quality assessment program is needed and that the USGS is well qualified to implement the proposed assessment program because of the USGS' nonregulatory mission and because of its ability to undertake the long-term commitment necessary for such a program to be successful." The Administration has endorsed these findings and is requesting additional funds in FY 1991 to begin a multi-year transition to a full-scale program, making NAWQA a key element of the Department of the Interior's involvement in the President's Water Quality Initiative.

Over the coming years we see the NAWQA Program shedding new light on a range of major water quality issues, including: (1) the extent and severity of surface and ground-water contamination from pesticides; (2) understanding the effects of agricultural best-management practices on water quality; and (3) the relative magnitudes of point and non-point sources of contamination in different areas of the country subject to different land uses. This type of information will assist local, State, and Federal agencies and the private sector in focusing preventive and corrective efforts on problems and in areas of greatest need. In the longer term, NAWQA will provide an information base that will be useful in determining the extent to which the desired results of these preventive and corrective efforts are being achieved.

I have reported to the Subcommittee in recent years that there has been a considerable increase in the emphasis of our Water Resources Programs on water quality concerns. This direction in our activities is in accord with our mission to assess the Nation's water resources. For example, early in the 1980's we began a major research effort which we call Toxic Substances Hydrology. In the relatively few years that this research program has been underway it has been responsible for major advances in the understanding of the complex processes by which a variety of prominent contaminants move to and in different surface and ground-water systems. These insights are now finding application throughout our own programs and in the programs of other agencies such as the Department of Agriculture.

The availability of new techniques and methodologies for use in describing and assessing contamination problems, coupled with an abundance of opportunities to apply them, is being reflected in unprecedented growth in requests from State and local agencies and other Federal agencies for USGS technical assistance on matters related to water quality. For example, today the preponderance of requests for new studies under our Federal-State cooperative program relate to water quality issues ranging from investigations of agricultural practices and their effect on water quality to studies of urban runoff. From other Federal agencies we have seen dramatic growth in requests for USGS assistance in addressing major water quality issues such as the effects of irrigation drainage and the clean up of toxic waste problems on U.S. military reservations. Expertise developed over the past 10 years in water quality and allied fields continues to exert strong influence on the composition of our program and has put us in a position to undertake major new efforts such as NAWQA which would not have been possible in the early 1980's. We have every reason to expect that this emphasis on water quality will continue through the next decade in all aspects of our Water Resources Program. We face the challenge of continuing to satisfy the many important, albeit more traditional, needs for water resources information that we have long served (e.g., basic data for flood forecasting, management and development of water supplies, design and operation of public works) and at the same time continuing to contribute information and assistance relevant to existing and emerging issues in the area of water quality. We look forward to this challenge.

This concludes my prepared remarks, Mr. Chairman, and I would now be pleased to respond to questions from the subcommittee.

Attachment

NATIONAL MAPPING PROGRAM

The Geological Survey is requesting **$126,771,000** for the National Mapping Program to provide a diversity of maps, digital cartographic data, remotely sensed data, and other geographic products and services. The FY 1991 request is a net increase of $15,266,000 from the FY 1990 enacted amount.

USGS is requesting an increase of **$14,500,000** to continue the development and implementation of the **Advanced Cartographic Systems (ACS).** Initiated in FY 1986, this program will allow for expanded and enhanced map revision capabilities at lower unit production costs. The National Mapping Program is responding to a technological revolution in the use of map data.

Federal and state agencies are improving and streamlining decision making by using computers as an extension of the thinking process to analyze large quantities of digital spatial data. Digital cartographic data, which form a framework for these analyses, also can be stored, edited, and retrieved for map revision more efficiently using ACS than with current mapping technology. Significant benefits will be realized as the Geological Survey implements its current strategy of developing a production capacity to support an average 10 year primary map revision cycle. Beneficiaries include a wide variety of Federal, State and local government users.

The National Mapping Program is also projected to be a major contributor to the Geological Survey's research program in global climate change. The National Mapping program will draw on its extensive experience in managing large digital data bases of earth science information and merging, spatially analyzing, and modeling these data in comprehensive geographic information systems to support the nation's researchers by cataloging, locating, and making available current land information and data. In FY 1991, an increase of **$4,100,000** is requested for three **data management and coordination activities:** $2,000,000 is requested to continue the design and development of the Land Data and Information Management System described above; an additional $2,000,000 is proposed to support research to define, develop, and test land surface characterizations to serve the needs of global process and modeling studies. These studies will help to define, characterize, spatially integrate, and map the extent and distribution of land surface processes which directly impact the environment and climate; and, $100,000 is requested to support the USGS participation in the Interagency Working Group on Data Management for Global Change. This working group was organized to help coordinate data management activities among the participating Federal scientific user community.

To help fund these high priority programs, reductions are proposed in several other Geological Survey mapping programs. In the National Map and Digital Data Production program, a decrease of $4,021,000 is proposed which will result in a reduction in the production of digital line graphs and digital elevation models (-$878,000) and a decrease in the number of orthophotoquads produced (-$1,643,000). We also have proposed that the SLAR program be terminated since that technology has been adequately demonstrated and there are alternative methods of gathering that data ($-1,500,000).

The National Data Base Management program is proposed to be reduced by $1,069,000 which will delay the production of certain USGS cartographic products and data. A decrease of $897,000 in the Geographic and Spatial Information and Analysis program will result in a reduction in the number of cooperative research and demonstration projects undertaken and a subsequent decline in the transfer of these emerging technologies among scientific users and organizations.

GEOLOGIC AND MINERAL RESOURCE SURVEYS AND MAPPING

The Geological Survey conducts basic geologic research and provides information on mineral and energy resources, both onshore and offshore, and on geologic hazards. These activities continue to result in knowledge and information that improves our understanding of the components, structures, and processes of the earth, leading to more intelligent uses of our nations natural resources. The FY 1991 request for these activities is $184,821,000, a decrease of $8,400,000 from the FY 1990 adjusted appropriation.

In FY 1990, the Congress provided one time emergency funding of **$12,000,000** to the Geological Survey for **earthquake investigations** and to undertake additional efforts toward improving earthquake preparedness throughout the United States. With that funding, USGS helped to establish a center for earthquake studies in Southern California, a cooperative consortium including participants from academia, industry, and federal, state, and local governments. The center is intended to provide support for earthquake research in the nation's most active seismic area. Also as a result of that supplemental funding, the USGS began intensive studies of the events surrounding the Loma Prieta earthquake of 1989 and began investigations of the seismic activities in the New Madrid zone which includes the states of Tennessee, Kentucky, Mississippi, Arkansas, Indiana, Missouri, and Illinois. Additional investigations are planned in the Intermountain region, the Pacific Northwest, and in Alaska. The FY 1990 $12,000 supplemental funding is not continued in FY 1991, however the earthquake funding request maintains the FY 1990 pre-supplemental level.

Two requested increases respond to the need to fund the high priority program in **Global Climate Change (+ $6,700,000)** which is a part of the Presidential Initiative, and also build on the basic research program in **Evolution of Sedimentary Basins (+ $1,250,000).** The Geological Survey has developed a coordinated Global Climate Change program which contributes to four of the seven interdisciplinary science elements defined by the Committee on Earth Science. The USGS program involves investigations in the areas of: (1) Earth System History; (2) Solid Earth Processes; (3) Climate and the Hydrologic System; and (4) Biogeochemical dynamics. In the Geologic and Mineral Resource Surveys and Mapping budget activity, the FY 1991 studies will focus on: studies of the geologic record to assist policy makers in decisions regarding the various potential outcomes of the greenhouse effect; paleoclimate research to expand studies of past marine and terrestrial climates and environments; polar climate research to expand efforts to monitor permafrost temperature profiles in Alaska to determine the recent history of climate change at high latitudes; arid regions research to expand efforts to improve understanding of the relationships between climate and surficial geologic processes; biogeochemical research to improve understanding of the sources and repositories of carbon and better understand the carbon cycle; and, volcanic emissions research to improve estimates of the volumes and composition of volcanic gases and their contribution to the composition of the atmosphere.

The increase proposed in the Evolution of Sedimentary Basins program would permit the Geological Survey to address a number of shortcomings in basic energy research. We are working toward making this program the core of our energy research program. To do so would benefit each of the commodity oriented assessment activities (oil and gas, coal, oil shale, uranium/radon, and geothermal) by providing high quality basin wide and regional data bases. This would provide independent, unbiased information on domestic energy resources required by the Department of Energy in developing a National Energy Strategy. It would also provide for the solid basic research program called for by the 1988 report of the National Research Council.

To assist in funding these high priority programs, decreases are proposed in this budget activity totaling $7,776,000. Research in the Coastal and Wetlands Processes program will be reduced by $3,100,000 from the base program level resulting in curtailing the Southern Lake Michigan Coastal Erosion Study. The Geological Survey will complete the five year Louisiana Barrier Island study and the plan for a National Study of Coastal Erosion problems during FY 1990. A decrease of $1,500,000 is proposed in the National Mineral Resource Assessment Program which will result in suspension of studies assessing the mineral potential of roadless and RARE II lands, mainly in Idaho. And, decreases totaling $3,176,000 are proposed in the Energy Geologic Surveys programs which would: delay the start of two coal availability studies in Appalachia (-$1,056,000); postpone the start of one hydrocarbon assessment and terminate five oil and gas research projects related to the generation, migration, and entrapment of oil and gas (- $802,000); discontinue currently ongoing topical research studies of the concentration and accumulation of

Radon gas (-$274,000); and reduce several hydrologic modelling and assessment activities of geothermal systems (- $1,044,000).

WATER RESOURCES INVESTIGATIONS

The Geological Survey Water Resources Program is a balanced effort involving the operation of nationwide water data collection network, and the conduct of surveys, investigations, and research on the status of the Nation's surface and ground water resources. The amount requested for this program for FY 1991 totals $155,716,000, which represents an increase of $5,841,000 above the 1990 enacted appropriation.

In FY 1991 the Geological Survey will continue to provide critical hydrologic information through a series of Federal program efforts, projects undertaken with over 1,000 non-federal cooperating agencies and governments, and through grant programs authorized by the Water Resources Research Act of 1984. In FY 1991, the Geological Survey proposes to begin the transition to a **National Water Quality Assessment (NAWQA)** program to monitor and assess to quality of the nation's surface and ground water resources. A seven year pilot phase, testing the feasibility and methodologies to be used in such a program, was completed during FY 1990. The pilot phase involved seven different regions of the country. The conclusions derived from these pilot studies were evaluated by the National Academy of Sciences and the feasibility for developing a national program was fully endorsed. This program will provide valuable information on a continuing basis to policy and management officials at all levels of government and industry and will be invaluable in resource management and land management decisions nationwide.

The Water Resources program will significantly contribute to the Geological Survey's Global Climate Change program in FY 1991 through investigations of: the interaction of climate and the hydrologic system; the sensitivity of the hydrologic system to changes in climate; and, the biogeochemistry of greenhouse gases. Again, each of these categories has been determined to be important to provide information needed by and supportive of the government's integrated global climate change effort.

BIOGRAPHY OF STEPHEN E. RAGONE

Acting Assistant Director for Research
U.S. Geological Survey
Department of the Interior

Dr. Stephen E. Ragone joined the U.S. Geological Survey in 1971 as a geochemist for the Bay Park deep-well injection project at Syosset Subdistrict, Long Island, New York. In this position, he studied the nature of the chemical reactions that occurred during the injection of tertiary treated sewage into ground water. From this position Dr. Ragone has progressed to his current position of Acting Assistant Director for Research by serving as the Chief of the Long Island Water Quality project from 1974-1977; serving as the Chief, Environmental Quality Studies Section, at the Indiana District from 1977-1980; moving to Reston in 1980 to serve as the staff scientist assigned to the Deputy Assistant Chief Hydrologist for Research and Technical Coordination; and in 1982, serving as the senior technical expert for the Toxic Waste--Ground-Water Contamination Program until he was appointed to the Assistant Director position.

Dr. Ragone received a BA in geology from Hofstra University in 1963 and a Ph.D. in geochemistry from Pennsylvania State University in 1968. From 1968 to 1971, Dr. Ragone served, while on active military duty, as a researcher at the Cold Region Research and Engineering Lab., U.S. Army Corps of Engineering in Hanover, New Hampshire, where he investigated the chemical variations in snow and ice from Greenland and Antarctica.

Dr. Ragone has published numerous reports on deep-well injection of tertiary treated sewage and on nitrate pollution in ground water. His thesis research dealt with the study of hydrolysis and polymerization process of iron (III) hydroxide in aqueous solution.

GLOBAL CLIMATE CHANGE

Senator REID. Our Nation is continuing to become increasingly concerned about the global climate change issue. On February 6 of this year, the Senate passed unanimously S. 169, the National Global Change Research Act of 1989. As chairman of the Earth Science Committee, would you tell us how this act affects your committee? I would also like to know where you believe we are heading as a Nation with respect to the global climate change issue.

What is the ultimate goal of the committee and what do you hope to accomplish?

Dr. PECK. The Committee on Earth Sciences [CES] was established by the chairman of the Federal Coordinating Council for Science, Engineering, and Technology [FCCSET] on March 6, 1987, and is scheduled to terminate not later than December 31, 1990, unless it is renewed by the chairman of FCCSET.

The ultimate goal of the CES is to establish a mechanism by which the appropriate research and development efforts take place to understand how the highly interactive system comprised of the solid Earth, the oceans, the atmosphere and magnetosphere, and the biosphere has evolved and how it functions today and how it will evolve in the future. This is an ambitious undertaking and, I believe, will require a long-term commitment.

Senator REID. Are we doing research for the sake of research?

Dr. PECK. No; the work is important for current and future management of the finite resources on our planet. Our concept of resources must no longer be limited to those things that can be extracted and sold but must also include all parts of the environment that are necessary for sustaining human life and culture in the short and long term.

The research is specifically directed at gaps in our knowledge that must be filled in order to provide a sound scientific basis for policy decisions. Based on this we have established a number of priority research areas.

Senator **Reid**. What are the priority areas?

Dr. **Peck**. A CES working group established a priority science framework in order to address the weaknesses in the body of knowledge on global change. Page 104 of "Our Changing Planet: The Fiscal Year 1990 Research Plan" is a diagram of that priority framework. Each science priority integrates a number of individual scientific disciplines. Each science priority is being studied across the Government to varying degrees depending on the science element position on the priority framework. However, this is a dynamic process and the science priorities will change as we learn more, fill in gaps in our knowledge, and gain a better understanding of how the global system works.

The Committee on Earth Sciences established a number of working groups. The first to be established is the Working Group on Global Change. This group is made up of representatives from the major Federal scientific research organizations who have a significant contribution to make to the understanding of global change in the environment. The working group, through its scientific contacts both in and outside the Government, determined the key scientific questions that need to be answered to gain a predictive understanding of global change. There are three major classes of questions: (1) What global change has occurred in the past and what is occurring now? (2) What physical, geological, chemical, biological, and social processes are involved in global change? (3) How well can global change be predicted?

The working group reviewed the scientific research conducted across the Federal Government, either by the agencies themselves or by outside scientists through grants and contracts, to determine what is the state of knowledge of global change.

Senator **Reid**. What actions are presently underway to coordinate the efforts of the many agencies and departments that are working with various facets of global climate change?

Dr. **Peck**. The agencies working with various facets of global climate change have established a priority framework for scientific research. These agencies have worked together in a spirit of cooperation which I believe is unique. Each agency proposes programs that they believe will meet the requirements of the U.S. Global Change Research Program to the Committee on Earth Sciences Working Group on Global Change.

The working group evaluates those proposals for scientific research based on the relevance or contribution that the research makes to the overall goal and the key scientific objectives of the program. The scientific merit of the work is also evaluated. The agency must be ready to do the work and the level of planning must be mature with the research likely to produce vital and needed advances. An important consideration is the linkages between agencies to ensure the interdisciplinary approach that is required of the research and that the best use is made of all available resources. Of course, cost is a consideration and the value of the potential contribution is weighed against the cost of doing the research. Enhancements to existing programs are encouraged since successful existing programs will probably provide a more rapid payoff in research results than will an entirely new program, and the approval of the requesting agency is required to ensure agency commitment.

It has surprised me how well these various agencies have worked together. There have been instances where the scientists from one agency would recommend that another agency take up research efforts to enhance the other agency's program without expecting a like gain in their own program. The whole process is based on the commitment of the scientists and their willingness to work together across agency lines.

At the U.S. Geological Survey, we are conducting global change research in cooperation with or complementary to the National Science Foundation, the National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, Environmental Protection Agency, Department of Agriculture, other bureaus within the Department of the Interior, and other agencies. We are active in the Interagency Working Group on Data Management for Global Change and the Catalog Interoperability Working Group to develop methods to ease the exchange of scientific data among agencies. We cooperate with universities. We have many active contacts on the international level such as the Intergovernmental Panel on Climate Change and the International Geophere-Biosphere Programme. Even more than our formal interorganizational activities are the contacts among scientists from different disciplines and organizations which are established because of similar research interests or through professional societies.

Senator REID. I guess global warming is taking place every place except in this room. [Laughter.]

You know, I'm curious. As large as Alaska is, with all the water and the mountains, have you completed mapping there? You said you've completed mapping in all 50 States.

Dr. PECK. We'll complete this year topographic mapping of all the 50 States, including Alaska. And we're well over 95 percent complete on Alaska, except for a few quadrangles down the Aleutian chain where the cloud cover is so persistent that we have a very difficult time getting aerial photographs.

USGS GLOBAL CHANGE PROGRAM

Senator REID. Your fiscal year 1991 budget identifies a funding increase for the global change program which was one of the initiatives in last year's budget request. On page 2 of your testimony you state that "the $28.2 million program includes increases totaling $14.9 million." I certainly favor global climate change research but this is a very substantial increase over last year's program of $13.1 million. What is the justification for an increase of this magnitude?

Dr. PECK. The increase is based on the costs of specific scientific research required to answer the questions put forward by the Committee on Earth Sciences. The USGS's fiscal year 1991 request is part of an integrated science program across the Government and is based on careful consideration of the agencies involved with global change research under the advice of the Office of Management and Budget. The USGS program will contribute significantly to developing the baseline data and information to be used throughout the scientific community. The budget levels support the overall program increases required to meet the need for scientific information by the policy makers.

Senator REID. How will the collection of additional data be beneficial to your program?

Dr. PECK. The U.S. Global Change Research Program is complex, scientifically diverse, and global in extent. It cuts across all Earth science disciplines and over all regions of the planet. The USGS portion of that program involves, in vertical extent from the subsurface, including solid Earth and groundwater, to the surface, involving surficial Earth processes and sea, ice, and shore interactions, to the atmosphere with the contributions of the solid Earth and the hydrologic system to the atmosphere. Our research reaches from pole to pole.

In order to make maximum use of the funding available we are localizing our studies and focusing them as well as possible on important near-term issues considering the limitations of available knowledge. One thing that we have discovered in this research is that our knowledge is limited in many areas. For instance, we know that the Pliocene, 2 to 4 million years ago was the last period when the Earth was much warmer than it is today. Why that was the case and what was the regional distribution of biological and climatic zones is less well defined. Understanding this will help us better understand what ecological patterns could be like in years to come if the climate does change. To gain that more detailed understanding requires more data from a wider area.

Knowing what happened in the recent past is no less important and we are developing techniques to gain an understanding of climates in the past hundred to thousands of years on an annual basis. Gathering these data will help us understand recent trends and provide information for verifying the climate models which may be used for policy decisions.

Gathering additional hydrologic data will allow us to provide water resource managers with information that will help them manage their river basins during time of varying climate, regardless of what the variation is. The present plan is a modest growth in the existing effort and allows us to increase from one river basin to two more in fiscal year 1991. This is allowing for the completion of the current study in the Delaware River Basin so that by late fiscal year 1991 there are only two studies in progress.

We will also gather additional data on permafrost to help define the boundary of the discontinuous permafrost zone. Although some data has been gathered, it is insufficient to define that boundary. The boundary is important because it helps us determine the amount of methane currently trapped in the permafrost that is in jeopardy of being released into the atmosphere. Methane is a greenhouse gas that is significantly more effective in trapping heat than carbon dioxide. There are other examples if you would like them.

Senator REID. What new data will you be collecting that you haven't been collecting in the past?

Dr. PECK. USGS has developed its Global Change Research Program on existing strengths and expertise. Therefore, the types of data to be collected in the future as part of our global change effort is, in most cases, similar in many ways to that collected in the past. The magnitude of the scientific challenges involved in understanding global-scale processes requires a major increase in human resources and equipment to acquire, archive, manage, distribute, and analyze the volume of data needed to understand global scale processes and events.

However, there will be some new data sets to be acquired starting in fiscal year 1991. These include: volcanic emissions data to determine the composition and volumes of gases, particulates, and aerosols released to the atmosphere by volcanic eruptions and volcanic vents; glacier core analytical data that will permit reconstruction of high resolution histories of changes in atmospheric composition, regional climate, and dust influx. There are other types of data sets that we will be producing that are secondary in nature, that is, they will be produced from primary data sets either gathered in the field or by remote sensing which have been processed and analyzed. This processed information will be made available to other researchers as well.

Senator REID. What would be lost if the increase was limited to $7 million?

Dr. PECK. There would be significant reductions in a number of our programs. Not only would it take longer to do some of the programs, but some important questions might not get answered leading to costly errors in policy decisions. Some examples of the effects of reduced funding include the following:

Significant reductions in the requested amount will prevent the fiscal year 1991 startup of USGS efforts to monitor and analyze volcanic emissions in order to improve understanding of such emissions on global climate. Reduced funding will prevent startup of new USGS efforts to understand the global carbon cycle from a geological perspective. This will impact understanding of the sources and repositories of carbon that must be understood to fully assess the future impacts of release of carbon dioxide and other greenhouse gases into the atmosphere. Reduced funding will also significantly reduce planned efforts to undertake new research on past climates that is needed to understand the consequences of future climate changes, and to test climate models. Reduced funding will dramatically reduce efforts to understand relationships between climate change and environments in arid and semiarid regions of the United States and the world—areas that may be particularly sensitive to future changes in climate.

At a reduced funding level, there would be a reduction in the number of river basins that could be studied. This would eliminate the possibility of some water resource managers gaining access to models that would assist them in managing their river basins in times of varying climate.

Some of the satellite data previously collected and on media that is currently deteriorating would be lost forever precluding its use as base line information against which to measure global or regional change. Data management systems necessary to efficiently manage and distribute some of the existing data and some of the data to be collected would take longer to build, delaying the availability of some of data to researchers by one to several years.

The program breaks down into three different units. One is about a $4 million increase for our Mapping Division. It includes $2 million for archiving of data, like Landsat data and advanced very high resolution radar [AVHRR], and $2 million for land surface characterization research, that's going to focus on Alaska and Colorado as two pilot areas.

There's an increase of about $6.7 million for the Geologic Division that involves a number of different elements. One is paleo-climate, studying the gases from ice cores and studying pollen and marine fossils and sediments from the Pliocene, from 2 or 4 million years ago, when the world's climate was about five degrees warmer. And then work in the Permafrost areas of Alaska, in cooperation with Canada and the Soviet Union, and in the polar areas of the world, to study temperatures in Permafrost which record the climate over the last several hundred years, to see if they indicate a change. And then work in sensitive arid regions and also the study of carbon dioxide and methane fluxes.

In our Water Resource Division, there are two main elements: one has to do with understanding the research to better understand the interaction between hydrology, water, on land and global circulation models and then to study the sensitivity of regions hydrologically to changes in climate. Part of that effort will focus on the Carson Truckee basin in Nevada and the analogous American and Stanislaus Rivers in California.

And we work very closely with all the other Federal agencies involved in this program under the Committee on Earth Science, which I chair.

LANDSAT FUNDING

Senator REID. With the Landsat satellite fund, you'll recall that on the day of last year's hearing a news story appeared in the Post with the headline "Satellites to Go Dark for Lack of Funds." So we found ourselves on the verge of turning off the Landsat satellites due to the failed privatization efforts of the previous administration. I understand the involved agencies arrived at a short-term funding solution which kept the satellites operational during 1989.

How are the Landsat satellites being funded in 1990 and what is the total cost per year?

Dr. PECK. I believe the total cost per year is about $18 million. I believe that the administration requested $9 million in appropriations to cover the cost for the first 6 months of this fiscal year. That's in NOAA's budget, I believe. They did not appropriate the funds for the whole year. This is important because of some uncertainty of how long the satellites are going to be in orbit.

We now have a request from the Office of Management and Budget through the Department of the Interior to provide some funds, which will be pooled with funds from the other Federal agencies involved, to support the $9 million cost for the second half of this year. And I believe we will be requesting reprogramming authority from OMB and Congress for the funds, which for the Geological Survey will probably be about $600,000.

Mr. **Bermel**. $603,000.

Senator **Reid**. Again, how much does the Geological Survey contribute to Landsat operations in fiscal year 1990?

Dr. **Peck**. The USGS is requesting authority in fiscal year 1990 to reprogram $602,600 from the national mapping, geography, and surveys activity, information and data systems subactivity, national data base management program element. The total being contributed by the Department of the Interior is $900,000.

Senator **Reid**. What are the national funding plans for Landsat for fiscal year 1991?

Dr. **Peck**. Since the Landsats 4 and 5 are well past their design lifetimes, the administration has not requested fiscal year 1991 funding for Landsat operations. However, we understand that the Department of Commerce has requested funding to support the launch of Landsat 6.

Senator **Reid**. Does your fiscal year 1991 request contain funding for Landsat?

Dr. **Peck**. No; not for Landsat operations. However, our fiscal year 1991 budget request for global change data systems includes funding for Landsat data maintenance and preservation.

Senator **Reid**. What plans are underway for a long-term solution?

Dr. **Peck**. The President's National Space Council is continuing a review of national policies related to civil satellite systems to carry out the President's decision to ensure the continuity of Landsat-type data. The principal objective of this review is to provide recommendations for the character and management of the post Landsat 6 program. It is anticipated that this review will be completed prior to the fiscal year 1992 budget request.

NEVADA GAZETTEER OF GEOGRAPHIC NAMES

Senator **Reid**. The USGS is cooperating with the University of Nevada-Reno, Bureau of Mines and Geology, to create a State volume of the "Geographic Names National Gazetteer Series."

Do you know the status of this project?

Dr. **Peck**. For this, I should ask Mr. Lowell Starr, the head of our National Mapping Division.

Mr. **Starr**. Yes.

Senator **Reid**. Mr. Starr, is that right?

Dr. **Peck**. Lowell Starr, with two R's.

Senator **Reid**. Right. What is the status of this project?

Mr. **Starr**. I cannot answer that. I have to provide it for the record.

Dr. **Peck**. It's pretty far along.

Senator **Reid**. Next year, you be ready for Nevada, OK? [Laughter.]

Mr. **Starr**. OK.

[The information follows:]

Status of Geographic Names National Gazetteer Project

The first phase of data base compilation, collecting feature names from USGS topographc maps, was completed for Nevada in fiscal year 1981. The second phase, compiling names information from other Federal, State, and regional sources as well as pertinent historical materials, was contracted with the Nevada Bureau of Mines and Geology at the University of Nevada-Reno on September 1, 1989, and is scheduled for completion in August 1991. After completion of Phase II data compilation, a State volume of the "National Gazetteer" will be published. Funds necessary for completion of this contract in Nevada were obligated in fiscal year 1990. Since the University of Nevada-Reno contract is not scheduled for completion until August 1991, it is anticipated that funds required to publish the Nevada volume will not be needed until fiscal year 1992.

ADVANCED CARTOGRAPHIC SYSTEMS

Senator REID. You're requesting $47.4 million in fiscal year 1991 to continue development and implementation of the advanced cartographic systems as part of the multiyear effort to enhance and expand map revision capabilities. This is an increase of $14.8 million over 1990. Since the program's inception in 1986, $83.2 million has been appropriated for this program.

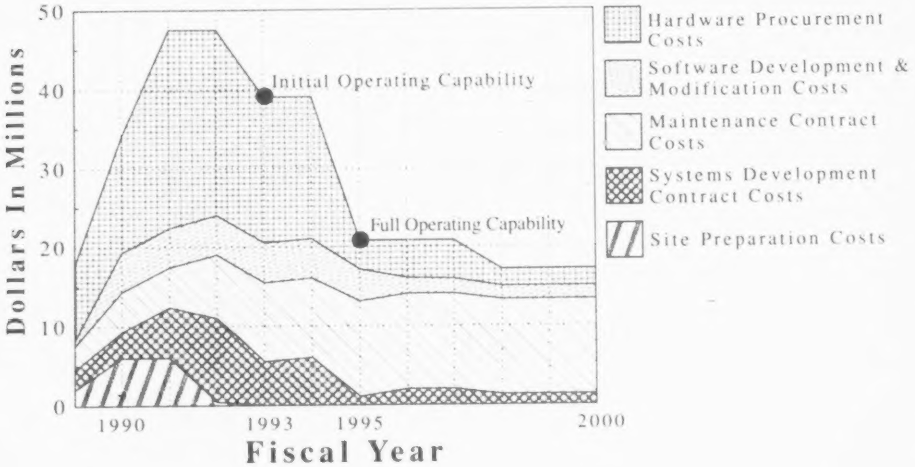
What will the total equipment and software cost for this program. Do we know that?

Mr. STARR. Yes; we do, we have a——

Senator REID. When is the targeted completion date?

Mr. STARR. We have a funding profile that goes out through the year 2000. As a matter of fact, we have a briefing board, Mr. Chairman.

Senator REID. OK.



ADVANCED CARTOGRAPHIC SYSTEMS
CAPITALIZATION & MAINTENANCE

Source: ACS Cost Effectiveness Study 6/2/89

Mr. STARR. The funding is broken out into various components. The funding started in 1986. As you will see, it is divided into hardware and software, as well as work for maintenance contracts and for systems development contracts, as the various colors on the chart indicate.

We also show, on the bottom of the chart, in the time period through 1986 to 1992, that we are modifying facilities——

Senator **Reid**. Now does this chart go back to 1986?

Mr. **Starr**. The first year is 1989——

Dr. **Peck**. We can supply the total costs for the record. I think the important thing is you can see the hump. The major expenses for facilities and hardware will be over in 1995, and then the area which is green on the graph, which is maintenance costs, those are the major costs in the out-years.

Senator **Reid**. OK. That would make sense.

So you've answered some of the questions that I had in the future with this chart. We'll ask you to be more specific.

Mr. **Starr**. We can give you for the record all the way back from 1986 and out to the year 2000.

Senator **Reid**. We would be interested in how this constant compares with the cost to operate the present system, OK?

Dr. **Peck**. Let me emphasize that these are capitalization costs, costs for equipment and facilities, not for operating costs.

Senator **Reid**. I understand this. Although we do have operating costs on the chart.

Dr. **Peck**. We have maintenance——

Senator **Reid**. Oh, but that's different than operating.

Dr. **Peck**. That's equipment and——

Senator **Reid**. OK. I missed that distinction.

Dr. **Peck** [continuing]. You know, contracts——

Senator **Reid**. I understand that. I missed that distinction. OK. So it'll be difficult for you to give us the cost comparison——

Dr. **Peck**. We can compare——

Senator **Reid** [continuing]. With the present system.

Dr. **Peck**. That's right. But we'll make a stab. [Laughter.] Easy for me to say.

Mr. **Starr**. One of the objectives is to increase the productivity, obviously, by modernizing and automating some of these things so we will have a greater capacity. So it won't be a direct correlation, but we'll give you the best correlation we have.

Senator **Reid**. Would you supply for the record a table that displays the annual equipment and maintenance costs to date, and the remaining costs for each of the next 5 years?

Dr. **Peck**. I would be pleased to do so, Senator.

[The information follows:]

ADVANCED CARTOGRAPHIC SYSTEMS

[In millions of dollars]

	Fiscal year—									
	Actual			Projected						
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Equipment	4.2	7.8	5.4	11.5	13.9	22.0	19.0	15.4	14.9	0.6
Maintenance	1.9	2.2	2.4	2.6	3.2	5.0	8.0	10.0	10.0	12.0
Other costs [1]	1.3	2.2	5.4	3.6	15.9	20.5	20.5	13.6	14.1	8.2
Total	7.4	12.2	13.2	17.7	33.0	47.5	47.5	39.0	39.0	20.8

[1] Includes such items as: Software development, systems integration, system engineering, facilities modification, and personnel.

Senator REID. Once the advanced cartographic systems are in place what will the cost be to operate the system?

Dr. PECK. The projected cost to operate the new system at the planned production capacity level in fiscal year 1996 is $71.1 million as presented in our ACS cost effectiveness analysis update of September 1989.

Senator REID. How will this cost compare with the cost to operate your present cartographic system?

Dr. PECK. The present system is not capable of producing the same type of output or level of production that ACS can. However, if we were to upgrade the current system such that it could produce this planned level of output while minimizing capitalization costs, operating costs for such a modified cartographic system are estimated to exceed twice the cost to operate ACS.

Senator REID. What results would occur if your time schedule was extended?

Dr. PECK. Well, the cost of the system would be significantly increased. We would lose the opportunity to obtain lowest system cost that derives from participating with the Defense Mapping Agency in system development and joint contracts and may lose the opportunity to obtain system components that will not be available on the open market. The benefits of operating the more efficient system would, of course, be deferred, as would the benefits of having more current map information in graphic and digital form to support Federal, State, and local applications. Also, duplication of effort would occur among Federal and State organizations during the extension period resulting in an increased cost to the Nation.

Senator REID. Can you explain how this system will enhance the capability of mapping activities of other Federal agencies and State and local governments?

Dr. PECK. Federal, State, and local government agencies, as well as the private sector, require current USGS multipurpose base maps and data as a framework for collecting, recording, and analyzing spatial information unique to their missions. In addition, the USGS serves as a backup mapping capability to the DMA in times of national emergency, and currently fulfills DMA's domestic mapping requirements. With the new system, USGS will better support their applications by keeping more maps up to date in both graphic and digital forms than we can using the current system. The most significant contribution the new system will make, however, is the production of multipurpose base map information in digital form to support computer-based analyses.

Senator REID. I understand that the cost-effectiveness study, which was completed in 1986, was updated in 1989. Would you summarize the findings now, and supply specifics for the record?

Dr. PECK. Briefly, Senator, the 1989 study shows that ACS will still result in large cost savings compared to the use of conventional technology. The updated analysis also shows that the capitalization costs for advanced cartographic systems is greater than had been estimated in the original study. I would be pleased to provide a more detailed summary of the study for the record.

[The information follows:]

ADVANCED CARTOGRAPHIC SYSTEMS—COST EFFECTIVENESS ANALYSIS UPDATE

EXECUTIVE SUMMARY

Introduction.—The U.S. Geological Survey (USGS) is implementing advanced mapping technology that will greatly increase map production efficiency and capacity in the 1990's. The technology, developed in the Advanced Cartographic Systems (ACS) Program, incorporates Department of Defense (DOD) developments into an advanced civilian map production system.

In 1986, the USGS conducted the Advanced Cartographic Systems Cost Effectiveness Analysis. The results from that analysis demonstrated that the implementation of ACS was cost effective over a wide range of map production levels. At the USGS' planned production level of 5,600 primary maps digitized and revised annually, the present value in 1986 of the estimated savings from ACS totaled over $100 million between 1987-2000.

Since the completion of the 1986 cost effectiveness analysis, the projected capitalization and production costs associated with ACS have been revised due to a number of interrelated factors occurring during the past three years. The purposes of this analysis are to (1) determine if ACS is still the least cost alternative; and (2) develop current estimates of outyear capitalization and operational costs associated with the implementation of ACS at a production level of 5,600 maps digitized and revised annually.

Methodology.—This analysis examines the costs of producing digital cartographic data and revised maps and data using two distinct production options: ACS and Conventional Technology.

ACS is an integrated system that is being developed in cooperation with the Defense Mapping Agency (DMA) in order to meet the civilian needs of the National Mapping Program. ACS procurements in large part are being conducted through DMA channels in order to take advantage of economies of scale made possible through large DMA procurements. These procurements are being supplemented by open market procurements needed for the specific product requirements of the National Mapping Program. With the continued implementation of ACS in cooperation with DMA, the USGS will directly benefit from DMA's major investments in software and in research and development.

The Conventional Technology option assumes that the USGS will implement advanced mapping systems without participating directly in DMA's system development. With this option, the USGS will procure advanced mapping systems exclusively on the open market. Some of these systems will result from DMA's development activities, but the USGS will not benefit from joint procurements with DMA. In the absence of direct USGS participation in DMA's development activities, the resulting systems will require substantially greater modification by the USGS prior to their integration into the National Mapping Program's production activities.

To gain a better understanding of the costs associated with ACS and Conventional Technology, three distinct production scenarios are examined. In each scenario, it is assumed that full operating capacity will be achieved in late fiscal year 1995. The three production levels are: scenario 1—2,500 maps revised and digitized annually; scenario 2—5,600 maps revised and digitized annually; and scenario 3—10,000 maps revised and digitized annually.

Scenario 2 represents the USGS' actual outyear production plans, while scenarios 1 and 3 are hypothetical plans developed for comparison purposes.

Capitalization and production costs are evaluated for each production scenario between fiscal year 1989-2000 for both ACS and Conventional Technology. Because full operating capacity is not expected to be achieved until 1995, and large capitalization costs are incurred in the early 1990's, analysis of costs through 2000 is required in order to provide a fair representation of both capitalization and production costs. Present value of cost calculations were determined using a discount rate of 10 percent with discount rates of 5 and 15 percent used for sensitivity analyses.

Results.—The results from this analysis show that ACS is cost effective for all three production scenarios. For Scenario 2, which represents the USGS' actual production plans, the ACS option is estimated to cost a cumulative $250 million less than Conventional Technology through the year 2000. The present value of this savings (using a 10 percent discount rate) is estimated to be $128.4 million.

ACS capitalization costs have changed since the 1986 analysis. Through fiscal year 1991, capitalization costs remain at the levels estimated in the 1986 analysis. In fiscal year 1992, estimated capitalization costs are $18.6 million less than the 1986 estimate. Current capitalization cost estimates are higher than 1986 estimates beginning in fiscal year 1993. The revised cumulative capitalization cost estimate is $57.9 million more than the 1986 estimate.

Additional funding will be required in the mid-1990's to achieve the production level of 5,600 primary maps revised and digitized annually. A large portion of these funds can be obtained through redirection of ACS capitalization funds as full operating capacity is reached in this timeframe. Additional funding can be obtained through cooperative agreements with Federal and State agencies or through increased appropriations to the Cartographic Data and Map Revision Program. For purposes of comparison with Conventional Technology, the implementation of ACS reduces production costs by more than $10 million per year beginning in 1993.

GEOGRAPHIC AND SPATIAL ANALYSIS

Senator **Reid**. The geographic and spatial information analysis request is decreased about $800,000 from last year's appropriated level of about $6.5 million. What effect will this reduction have on other agencies' geographic information system activities?

Mr. **Starr**. Well we'll have some fewer projects. What we have tried to do with this geographic information system activity is to have multiagency participation on a number of projects.

Senator **Reid**. Has that been done before?

Mr. **Starr**. Yes; it has. We've been doing this for several years now.

Dr. **Peck**. We have a very nice facility in each one of the centers, and particularly in Reston, a Geographic Information Laboratory. And we have guest workers come from State and local organizations and from other Federal agencies to work with our scientists in using the very fine instrumentation there. That will continue, but with somewhat less funding on our part.

Senator **Reid**. Is there any attempt to apply a set of Governmentwide standards or guidelines to the development of data bases for GIS systems?

Dr. **Peck**. I'm glad you asked that question, Senator, because the Geological Survey is playing a critical role in developing and applying standards and guidelines. At the request of OMB we chair the Federal Interagency Coordinating Committee on Digital Cartography [FICCDC] that coordinates the spatial data activities of Federal agencies. To assist Federal managers and technical specialists in evaluating, designing, and procuring geographic information systems and acquainting them with the issues surrounding GIS usage, the FICCDC prepared a report entitled "A Process for Evaluating Geographic Information Systems." Over 4,000 copies of the document have been distributed worldwide since its publication in 1988.

The FICCDC is also coordinating the development of a spatial data transfer standard that is now being completed, and will be sent to the National Institute for Standards and Technology in mid-1990 for consideration as a Federal information processing standard. This standard enables transfer of spatial data among otherwise incompatible systems, and promotes the sharing and multiagency use of digital cartographic and geographic data.

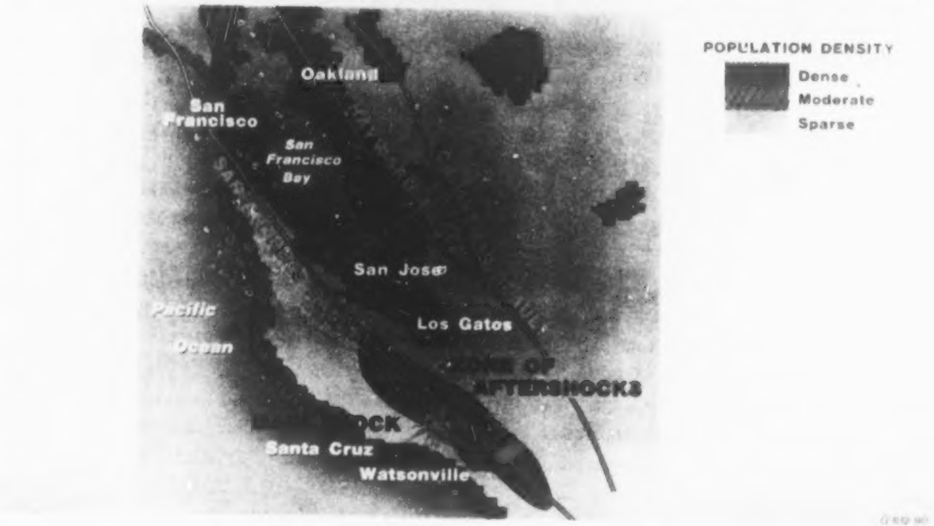
The FICCDC is revising OMB Circular A-16, the circular that assigns surveying and mapping responsibility in the Federal Government. The revision will add categories of spatial data for Governmentwide coordination and establish an interagency committee to promote the coordinated development, use, sharing, and dissemination of these data. An example of activity that the FICCDC would support through a revised OMB Circular A–16 process is the development and implementation of a national digital spatial data bases system. The system would be comprised of independently held and maintained Federal digital spatial data bases that meet certain minimum standards, are national in scope, and of interest to multiple agencies. FICCDC's enhanced role in spatial data coordination is being proposed at the request of the OMB Director, and the revised OMB Circular A–16 will be forwarded in March 1990 to OMB for review and approval.

In addition to these FICCDC initiatives, the Geological Survey's National Mapping Program has developed guidelines for accepting data produced by other agencies into the national digital cartographic data base. The USGS is working with several Federal and State agencies and developing agreements which provide for the acceptance of these agencies' data which are then made available for use in the public and private sectors.

EARTHQUAKE EMERGENCY SUPPLEMENTAL FUNDS

Senator REID. The Geological Survey recently received $12 million in dire emergency supplemental funds. Congress directed that the $8 million be used for earthquake investigations——

EARTHQUAKE HAZARD FOR
SAN FRANCISCO BAY REGION



Thank you, Mr. Starr—and that $4 million be used for activities leading to long-term earthquake hazard reduction.

What are your plans for expenditure of the $8 million?

Dr. PECK. The plans roughly are this: We're committing $5 million for post-Loma Prieta earthquake studies. We issued, jointly with the National Science Foundation, a request for proposals in early December and we've already received some responses.

This will include studies not only of geology and seismology, but also of the buildings themselves, the structural engineering and ground response—the whole gamut—and some of the social and warning aspects.

We'll be expending $1.5 million for capitalization in the northern California area. We're now concerned about other segments of the San Andreas Fault and the faults in the East Bay region. This will provide for measurement and new instrumentation techniques and models.

Then there's $1.5 million to work in southern California, where there's a substantial threat, to work jointly with the universities there, and particularly Cal Tech and the University of Southern California, to try to get started a cooperative program with those universities and with the State to get a better handle on the earthquake problem in southern California.

Then $3 million will be expended in the midcontinent area, the New Madrid area, where there was a major earthquake in 1811 and 1812; $2 million of that will be for contracts with the universities to start some studies on the hazards and to instrument the area better, and $1 million for our own studies in that area.

And then there'll be $1 million for studies elsewhere of hazards, particularly in Alaska and the Pacific Northwest. Those funds will be expended this year.

Senator REID. Will priorities within your Earthquake Hazards Reduction Program be shifted as a result of the Loma Prieta earthquake and as followup to the supplemental funds activities?

Dr. PECK. Priorities will not be shifted significantly within the base program as described in the President's budget request for fiscal year 1991 as a result of the Loma Prieta earthquake. In general, the lessons learned from the earthquake applicable to the USGS Earthquake Hazards Reduction Program confirm the existing direction of the program, both in terms of strategy and topics addressed. In fact, the earthquake and its effects indicate the high value of techniques such as probability forecasts and seismic zonation which have been extremely important components of the program for some time. The earthquake does strongly underscore the importance of further development of these techniques and their application both in California and in other earthquake prone regions of the Nation, particularly the Pacific Northwest (Washington and Oregon), a focus within the fiscal year 1991 request, and the new Madrid seismic zone where work is being increased with funds from the fiscal year 1990 dire emergency supplemental. The fiscal year 1991 request, however defers further concentration in the new Madrid zone pending completion of work in the Pacific Northwest.

Senator REID. What are some of the important lessons learned from Loma Prieta and how have these lessons been integrated in your fiscal year 1991 program?

Dr. PECK. Among the important lessons learned from this earthquake are:

The initial effort to forecast probabilities of large earthquakes along various segments of the San Andreas Fault appears to be validated by the occurrence of the Loma Prieta earthquake along one of the fault segments identified as high probability. Despite this success, a great deal remains to be done, both in learning how to make more reliable probability forecasts, but especially in obtaining the specific geologic information required to make the forecasts in important earthquake prone regions. The initial 1988 forecast was limited to portions of the San Andreas Fault and three of its major branches in California. Even along segments of these faults, the necessary information about the long-term rate of movement and the earthquake history of the last few thousand years is extremely sparse. Much remains to be done to improve the understanding of the San Andreas and its subsidiary branches and of the many other faults in California capable of producing damaging earthquakes. This is necessary so that we may adapt the technique and gather the necessary information to apply it to make reliable probability forecasts in other earthquake prone areas.

The effects of the Loma Prieta earthquake graphically demonstrated the importance of geologic site conditions on the potential for earthquake damage. Particularly important in this earthquake were amplification of strong shaking at soft soil sites, liquefaction of saturated sandy soils, and landsliding, particularly on steeper slopes. The identification and mapping of the potential for these and other similar conditions for use in land use planning and building codes is called seismic zonation. Here again, much remains to be done, both in terms of technique development and in application to earthquake prone regions. Although the geologic techniques are well developed to identify and describe these conditions qualitatively, the current problem is to describe the conditions quantitatively in ways that design engineers can use and that can be incorporated in building codes. Gathering the regional geologic information required to begin seismic zonation is an important component of ongoing work in California and the Pacific Northwest and of the work begun with the dire emergency supplemental in the New Madrid seismic zone.

Both on scientific and public policy fronts, the Loma Prieta earthquake offers encouragement for the pursuit of earthquake prediction, especially over the intermediate term—months to years. From 1906 until 1988 no earthquake as large as magnitude 5 occurred along the Loma Prieta segment of the San Andreas Fault. In June 1988 and again in August 1989, earthquakes of magnitude 5 occurred along the segment. Each of these earthquakes caused considerable concern at the time, particularly since they occurred along a previously quiet, high probability segment of the fault, and, following each, consultations between USGS scientists and State of California officials resulted in the State office of emergency services issuing earthquake advisories warning of a period of a few days for which there was an enhanced probability of a larger earthquake. These earthquake advisories were generally well received by the local governments and the public and may have contributed to heightened readiness for the Loma Prieta quake. From a scientific point of view, it is clear that these two magnitude 5 earthquakes, together with a subtle change in the rate of geodetic strain in the region that began at the time of the June 1988 earthquake could have been identified as intermediate-term precursors if we had had sufficient understanding to recognize them as such. Unfortunately, the level of instrumentation in the immediate Loma

Prieta region was inadequate to determine whether short-term precursors might have been observed.

Senator **Reid**. Who will be responsible for maintaining the Southern California Earthquake Center?

Dr. **Peck**. The Southern California Earthquake Center will be organized as a consortium of universities, the USGS, and the State of California. Lead universities include the University of Southern California [USC], the California Institute of Technology [Caltech], the University of California at Los Angeles, and the University of California at Santa Barbara. Other universities ranging from California to Massachusetts will also participate. The universities, led by USC, have primary responsibility for securing and managing funding sought from the National Science Foundation. The USGS will be responsible for its own participation and for university participation supported with USGS funds. Physical facilities will be distributed among participating institutions and managed by each. The principal data center is planned to be located in Pasadena and jointly managed by the USGS and Caltech.

Senator **Reid**. How will the $4 million be used?

Dr. **Peck**. The $4 million from the dire emergency supplemental will be used to support earthquake hazard reduction activities in portions of the Nation outside California. Of this amount, $3 million will be used to begin a focused and comprehensive set of investigations of potential earthquakes and their effects in the New Madrid seismic zone of the Central United States, including portions of Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri, and Tennessee. The Congress asked the USGS, prior to the Loma Prieta earthquake and prior to the passage of the dire emergency supplemental, to prepare a plan for such a set of investigations. As part of this planning process, a workshop was held in Memphis last November. A report describing this plan is now being completed and will be submitted to Congress by May 1, 1990. The $3 million will be expended to begin activities described in the plan. The USGS issued a program announcement in January 1990, seeking non-Federal participation in this effort. One hundred thirteen proposals from universities, State geological surveys, the private sector and others were received prior to the March 1 deadline. Evaluation of these proposals will be completed in early May. About $2 million of the dire emergency supplemental funds will be allocated to these proposals in accord with the plan under preparation. A complementary process to determine highest priority needs for funds to be allocated to internal USGS activities in the New Madrid seismic zone—about $1 million—is also underway.

Of the remaining $1 million for long-term earthquake hazard reduction activities in other parts of the Nation, the largest portion will be used for capital and installation expenditures associated with those portions of the national seismic network [NSN] not funded by the Nuclear Regulatory Commission and for building connections between the NSN and regional seismic networks operated by universities and the USGS. In general, in view of the onetime nature of the dire emergency supplemental funds, emphasis is being placed on studies that can be completed in 1 year, and on capital expenditures that build a base for longer term earthquake hazard reduction activities.

Senator **Reid**. Are you anticipating a need to shift priorities within the Earthquake Hazards Reduction Program to complete New Madrid seismic zone activities?

Dr. **Peck**. Yes; we believe that there is a strong need to address the earthquake hazards in the New Madrid seismic zone. The issue is one of scheduling the work in the most effective manner to meet the highest priority needs across the Nation with the limited resources available. Beyond California, the two highest priority areas at present are the Pacific Northwest and the New Madrid zone. As described in the fiscal year 1991 budget justification, the hazards—and problems—presented by the Pacific Northwest are larger than previously thought. Rather than give inadequate attention to both areas by dividing our efforts, we are focusing resources in the Pacific Northwest until we have attained a substantial increase in our understanding of the hazards there. We do not believe that this will occur before the mid-1990's. Following completion of studies funded by the dire emergency supplemental, work in the New Madrid seismic zone will revert to the level of long-term background studies funded in fiscal year 1989, until the focus in the Pacific Northwest is completed. At that time, it will be possible to resume the concentrated focus described in the plan to be submitted to Congress by May 1, 1990.

NEVADA SEISMIC NETWORK AND STAFFING

Senator **Reid**. The USGS supports the University of Nevada Seismological Laboratory in operating the Western Great Basin-Eastern Sierra Nevada Seismic Network. The program, like others located in areas of high levels of seismic activity, has been basically level funded.

Is the USGS considering eliminating one of the seismic networks it supports?

Dr. **Peck**. We have considered eliminating some of the networks in the country as a whole over the last few years, and we have eliminated some of those, because the funding for the earthquake program has been level in total dollars for more than 10 years. In the meantime, inflation has decreased what we get for those funds, and so we've had to eliminate some things.

I will turn to my Chief Geologist, Dr. Benjamin Morgan, to ask whether we're considering eliminating any networks in Nevada?

Dr. Morgan. No.

Dr. **Peck**. That's a straightforward answer. [Laughter.]

Senator **Reid**. The Nevada lab doesn't currently have a U.S. Geological Survey seismologist on the staff. In efforts to relocate personnel to areas of need, is your office considering—and we, of course, ask your associate behind you—sending a seismologist to the University of Nevada lab?

Dr. **Peck**. There have been discussions of that for many years. And we have, of course, moved some of the mineral resource geologists to open a new office in Reno.

Senator **Reid**. That's because of the heavy activity in geology.

Dr. **Peck**. Yes; because of the enormous interest in gold deposits.

Senator **Reid**. We're also involved with an earthquake activity program.

Dr. PECK. Yes.

Dr. Morgan. We carry out that program on contract with the University of Nevada and it's worked very well in the past. I don't think we have any plans at the moment to transfer personnel.

MOUNT REDOUBT VOLCANO

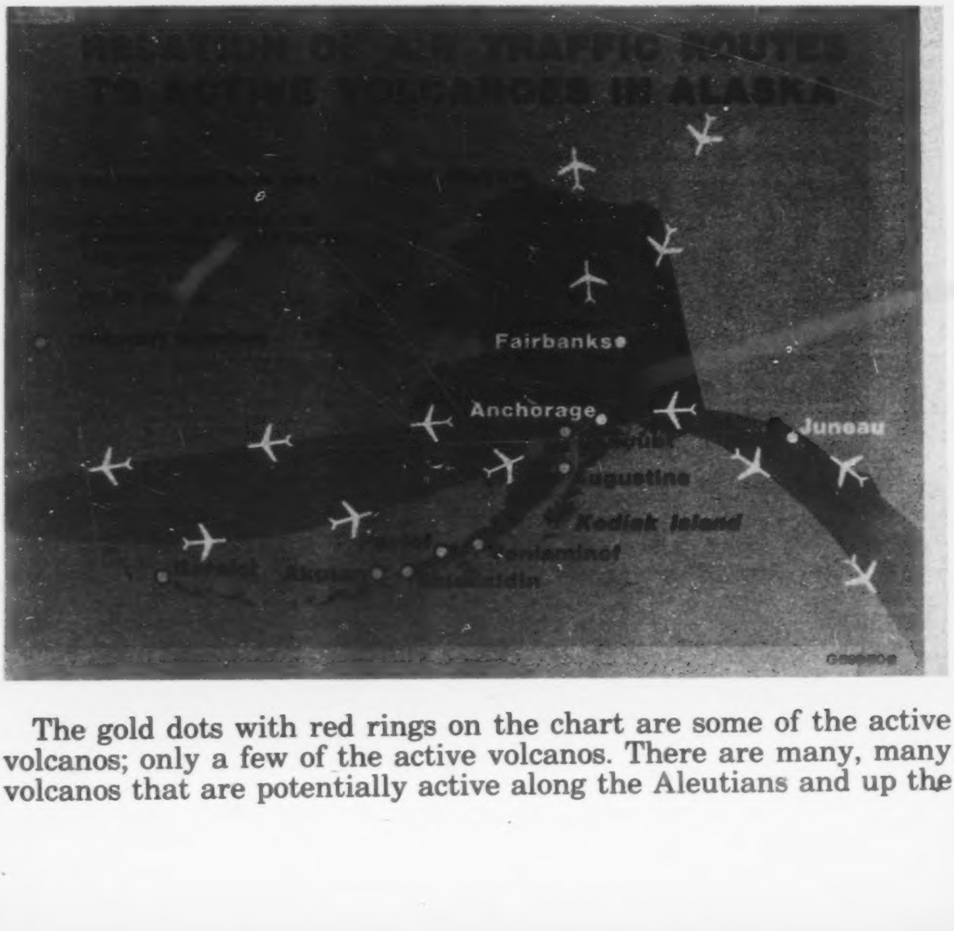
Senator REID. The Geological Survey's Volcano Hazards Program is proposed at the same level as appropriated in 1990. Mount Redoubt's eruption in December brought national attention to Cook Inlet and its five active volcanos. This committee provided $500,000 last year to continue the operation of the volcano monitoring network at Cook Inlet in Alaska.

What disruption has the Redoubt volcano caused for this region?

Dr. PECK. Well it's caused considerable disruption, as do other eruptions in the area. The Augustine volcano caused a similar disruption. The eruptions produce ash, in fact, we have a really nice exhibit of that—the ash disrupts the airplane routes in and out of Anchorage and, to a lot of radar, ash clouds look a lot like water clouds.

Senator REID. Is that right.

Dr. PECK. And so it can't easily distinguish an ash cloud from a water cloud. And as a result, some of the airplanes have flown into an ash cloud and, no lives have been lost, but it's been fairly perilous. One airplane dropped many thousands of feet. The same thing happened over Indonesia several years ago.



The gold dots with red rings on the chart are some of the active volcanos; only a few of the active volcanos. There are many, many volcanos that are potentially active along the Aleutians and up the

Alaska Range. And then you can see the routes in and out of Anchorage.

Senator Reid. Redoubt is right next to Anchorage, is that right?

Dr. Peck. Yes.

Senator Reid. How far away is it, does anyone know?

Voice. 120 miles.

Senator Reid. 120 miles.

Dr. Peck. So we've been operating on an emergency basis. We're very pleased that Congress provided the funds to get that observatory going. And that's a 50-50 co-op with the very fine people at the University of Alaska at Fairbanks.

Senator Reid. But really it was provided for a different reason, wasn't it? We did——

Dr. Peck. We were concerned about Augustine, yes. And as I said, there are probably 100 volcanos and 50 potentially active volcanos along there.

So we are requesting—we're operating at a far higher level than the $500,000. We're requesting emergency funding for that.

Senator Reid. What monitoring activities are underway presently at Cook Inlet?

Dr. Peck. The Alaska Volcano Observatory, a joint activity of the USGS, University of Alaska Geophysical Institute, and the Alaska Division of Geological and Geophysical Surveys, presently monitors seismicity at Augustine, Iliamna, Redoubt, and Spurr volcanoes, and tilt at Augustine volcano. In addition, measurements are made each summer of volcanic gases and geodetic survey—electronic distance measurement—lines on Augustine volcano.

A greatly expanded effort is underway in emergency response to the current eruption of Redoubt volcano. Six new seismic stations have been added to monitor both the volcano and the Drift River, seismic data are being analyzed in near-realtime 24 hours per day, and frequent overflights and helicopter-assisted ground surveys are being made of the crater, of new domes, of the Drift Glacier and river channel, and of new flow deposits both near and far downstream from the volcano. A lightning detection system has been borrowed from the BLM and is detecting ash clouds. Preparations are also underway for monitoring subtle inflation and deflation of the volcano and volcanic gases as soon as weather and longer days permit. Planning is also underway for GPS monitoring of ground deformation at Redoubt, if emergency funding becomes available.

Senator Reid. What are you learning from the monitoring activities?

Dr. Peck. Monitoring's primary role is to tell us when Redoubt is getting ready to erupt, is erupting, or has stopped erupting. When the vent has been plugged by a large lava dome, small earthquakes have forewarned of eruptions. When the plug is not as strong, the volcano has given little or no advance seismic warning. Monitoring of ground deformation may help in the latter case, and will surely help in the interpretation of the overall course of the eruption.

Monitoring of change on the Drift Glacier and in the Drift River, including rapidly melting of snow and ice during eruptions and rapidly shifting channels downstream, gives valuable information about hazards to the Drift River oil terminal. In addition, many of these lessons can be applied to assessment of hazards around snow-capped volcanoes of the Cascades, such as Mount Rainier.

Monitoring of airborne ash remains tricky but some progress is being made. Seismic monitoring has proven to be the most reliable, 24-hour-per-day method for detecting explosive eruptions large enough to generate ash clouds. Once the seismographs indicate that an eruption has begun, the lightning detection system shows if there is a significant amount of ash. AVO is using these methods in tandem. Pilot reports are and will remain the primary means for establishing the height of ash plumes until weather radar is installed; NOAA and FAA wind trajectories, pilot reports, and AVO observers indicate the direction in which ash will be blown. Satellite images are also being analyzed by NOAA, NASA, and others, but several factors, including weather clouds and timeliness of results, make these images more useful for aircraft far downwind from Redoubt than for aircraft near Anchorage. The USGS is working with other agencies and organizations to develop and test new methods of ash detection that would be suitable for warnings to aircraft.

Senator REID. How has that information been useful to date?

Dr. PECK. Information from AVO has been the primary basis for precautionary actions by the FAA, airlines, the Cook Inlet Pipeline Co. (Drift River facility), and communities around the Cook Inlet. The warnings have been used in four ways: (1) to prevent loss of life; (2) to avoid physical damage to aircraft, computers, and machinery; (3) to stimulate actions that protect the environment, especially at the Drift River oil facility; and (4) to indicate when hazard is low enough that normal economic activity can proceed. The USGS strives to give all four types of information, recognizing that sometimes there is a delicate balance between protecting life and minimizing disruption of economic activity.

In the specific case of protection for aircraft, AVO advises the FAA and NOAA of every change in the status of the volcano, and responds to direct inquiries from airlines as well. Airlines are using the information for immediate advice to pilots and for longer range planning.

The economic costs of the present eruption of Redoubt and the costs and benefits of monitoring are still being estimated. Such estimations are largely outside the expertise of the USGS. However, we understand that many aircraft have changed course or schedule to avoid ash that can cause several tens of millions of dollars damage per encounter and endanger human lives. Only one or two avoided encounters with ash would justify the entire AVO operation and the FAA's work in disseminating ash information. Similar arguments could be made for the benefits of environmental protection around the Drift River terminal. The costs of economic disruption and thus the benefits of being able to maintain normal economic activity are especially difficult to estimate, but may also be substantial.

COASTAL AND WETLANDS PROCESSES

Senator REID. Let's talk about coastal and wetlands for a while.

The Geological Survey's coastal and wetlands processes program for 1991 is reduced $3.1 million, which is over one-half. Last year, Congress provided $2 million to continue the Louisiana wetlands study, $1.3 million to complete the Louisiana Barrier Islands erosion study, $1 million to initiate erosion and pollution studies along the Alabama and Mississippi coasts, and $300,000 for the Survey to prepare a national program plan for coastal studies which was to include western Louisiana and eastern Texas.

Senator REID. What projects are affected by the $3.1 million decrease and what are the reductions in each? What will be the impact of these decreases in each area?

Dr. PECK. For fiscal year 1990, the U.S. Geological Survey budget for the coastal erosion and wetland studies of $6.1 million is being used to support existing studies in Louisiana, Alabama-Mississippi, and southern Lake Michigan. The $2.936 million in the fiscal year 1991 budget is an outgrowth of the administration's no net loss of wetlands policy and the recognition that understanding the physical processes and the geologic framework is initially important to managing and preserving our wetland resources. The fiscal year 1991 budget would be used to carryout field investigations in three areas: (1) study the Atchafalaya Basin in Louisiana, (2) study fresh water wetlands around the Great Lakes and in interior parts of the United States, and (3) study open-coast wetlands on the Florida coast fronting the Gulf of Mexico. However, the fiscal year 1991 budget reduction would maintain a reduced effort in studying Louisiana wetlands and suspends efforts in Alabama-Mississippi and southern Lake Michigan.

Senator REID. Will the proposed $3.1 million reduction in the program affect other wetland studies?

Dr. PECK. The $3.1 million decrease would reduce the studies underway in Louisiana wetlands and would require suspension of wetland studies that are part of the Alabama-Mississippi project.

Senator REID. What's the status of these projects?

Dr. PECK. Well, the status is as follows: the Louisiana coastal erosion program, that was the $1.3 million, will be completed this fiscal year.

The Louisiana wetlands program is proceeding. That's a cooperative program with the Fish and Wildlife Service. We're proposing, with the budget constraints as they are, to decrease that to a $1 million level for the following year.

The plan will be transmitted to Congress by May, which is I think the——

Dr. MORGAN. The national plan.

Dr. PECK. The national plan. That plan is well along; we have had a whole series of workshops.

Our proposal includes $2 million for wetlands studies including the inland and the prairie potholes and work along the Mississippi River and some work in the gulf coast, including northern Florida. But I think the Alabama and Mississippi work is not funded under our proposal.

Dr. MORGAN [continuing]. Now being considered for termination.

Senator REID. Which one would be?

Dr. PECK. Alabama and Mississippi, which is funded at $1 million this year.

There is also an element you didn't mention, the southern Lake Michigan coastal erosion program. That also will be terminated, but there'll be some work on Great Lakes wetlands.

Senator Reid. The Fish and Wildlife Service has, in the past 2 years, bought water rights for Stillwater Wildlife Refuge, which is dying. Saving this national wildlife refuge is of high priority to many, including the President, which he included in one part of his budget $2 million to buy more freshwater to save this wetlands.

To what extent and in what way does your coastal and wetlands processes program work in tandem with the Fish and Wildlife Service?

Dr. Peck. Well the planning for the Louisiana wetlands study was in cooperation with the Fish and Wildlife Service. And we jointly held workshops involving them and other Federal agencies and they also have a program on Louisiana wetlands. The Fish and Wildlife Service took the lead in planning the fiscal year 1991 and subsequent years wetlands program and we're participating with them in that planning.

And we would anticipate in addition some cooperative research programs between our Geology and Water Division people and Fish and Wildlife Service people in understanding wetlands better.

Senator Reid. Will the proposed $3.1 million reduction in the program affect the Stillwater area that we've talked about before?

Dr. Peck. I don't think that that will affect Stillwater, no.

MINERAL RESOURCE ASSESSMENTS

Senator Reid. On page 153 of your justification there is a statement that mineral resource assessments are necessary for efficient, effective, and responsible management of public lands. It is also implied that because of the lack of assessments, enormous quantities of undiscovered strategic and critical minerals essential to our national prosperity and security may be withdrawn from exploration and development. The President's National Critical Materials Council agrees with your position by reporting that a basic problem is a lack of adequate mineral assessment of these lands.

However, a funding reduction of $1.5 million is being recommended. I believe that this will result in negative impacts to an issue which I strongly support, and that's strategic and critical minerals.

It seems to me that although USGS and the Materials Council recognize the problems and long-range benefits, OMB is being very shortsighted and fails to support investing in the Nation's future. So I am assuming that OMB cut this from your requested level. Is that right?

Dr. Peck. Yes.

Senator Reid. Could you elaborate on the impacts that will occur if these mineral assessments are delayed due to reduced fundings?

Dr. Peck. Well we will have to stop the mineral assessment work we're doing, particularly in Idaho under this program. And we'll turn the results that we have to date over to the Forest Service and the Bureau of Land Management to help them in making their decisions. But it will cut short the reports and particularly some of the field work and analyses of the samples.

The result will be a poorer understanding of the mineral potentials of areas being considered for wilderness status in Idaho. And, as a result, some major deposits might be incorporated in designated wilderness areas. Coming from Nevada, you're well aware of the very large mineral resources of the West, and particularly States like Nevada and Idaho, and some of those major deposits are worth millions of dollars.

SEARCHLIGHT, NV

Senator REID. I have a section in my questions for a place called Searchlight. And while it might not seem important to you and your staff, tell them to pay particular attention to this because this is where I was born, OK? [Laughter.]

Dr. PECK. Yes; we're also concerned about the desert tortoise.

Senator REID. I'd rather you become more concerned about Searchlight in general.

Dr. PECK. We are concerned about Searchlight and we hope that soon we'll have approvals from the Bureau of Land Management to proceed in our cooperative program.

Senator REID. Great.

LOW-LEVEL RADIOACTIVE WASTE DISPOSAL

The USGS will be concentrating studies on hydrologic problems associated with low-level radioactive waste disposal at Beatty, NV.

Dr. PECK. Yes.

Senator REID. Do budgetary constraints force you to limit your areas of study?

Dr. PECK. The breadth and complexity of research that is undertaken is a function of the level of resources available to support these activities. As funding has declined for the USGS Nuclear Waste Hydrology Program, investigations at a number of field sites have been discontinued. With the level of resources requested for fiscal year 1991, it is proposed that most remaining field investigations related to low level nuclear waste disposal be focused at the commercial disposal site at Beatty, NV.

Senator REID. Will the USGS's presence in Beatty bring jobs to that area?

Dr. PECK. The USGS has been conducting research activities in the vicinity of the Beatty, NV, site since the mid-1970's. USGS activities at the Beatty site will not expand significantly in fiscal year 1991 compared to the current fiscal year funding level of about $350,000. The nature of USGS involvement at the site does not involve large scale development or construction and, therefore, does not generate private sector employment opportunities.

Senator REID. It's obvious that you've chosen Beatty because we've had low-level radioactive waste being stored there for decades now. That's why you've chosen Beatty as a place to study, is that right?

Dr. PECK. Well it's also one of the three low-level sites open for storage. It's also a particularly interesting site to study the phenomena of radionuclide migration.

But I'd ask Mr. Cohen to come to the table. He's our Chief Hydrologist and he's spent a good part of his early career working on the hydrology of Nevada out of the Carson City district office.

Mr. COHEN. It's an outstanding research site, Senator Reid. The waste has been there a long time. We've had access to the site and have fairly elegant research going on which not only relates to the issues in Nevada but which will have national implications in terms of the migration of radionuclides, both downward and upward.

Senator REID. Is your budget sufficient to allow you to do the studying this coming year?

Mr. COHEN. Yes, sir; as a matter of fact, we're focusing virtually all of our low-level radioactive waste activities at Beatty.

Senator REID. Will there be additional people coming to Beatty?

Mr. COHEN. Most of the Beatty work is done out of our Carson City office with some support from a subdistrict office in Las Vegas.

Senator REID. To what extent are you using University of Nevada system for help in this study?

Mr. COHEN. I'm unaware of any University of Nevada people working with us directly on the Beatty site.

YUCCA MOUNTAIN PROJECT

Senator REID. Tell me what USGS is doing with the Yucca Mountain project.

Dr. PECK. We have, as you may know, Senator, a major program where we support the Department of Energy in carrying out geologic and hydrologic studies at the site. During this year I believe that's being carried out at a level of about $25 million a year with roughly 200 full-time equivalent people.

At the present time we've been doing a lot of monitoring at the site, monitoring of precipitation and stream flow when it occurs and the seismology and other aspects. We also have been doing study plans, which is part of the process, and within the next few months we expect to be able to carry out studies of the surface that don't disturb the ground to understand better some of the phenomena at the site.

Other sorts of work, of course, are being held up, awaiting resolution of controversy between the State and the Department of Energy.

NATIONAL WATER QUALITY ASSESSMENT PROGRAM

Senator REID. Mr. Cohen, we appreciate your help.

We have some other questions that relate to national water quality.

The national water quality assessment program appears to be growing significantly.

Dr. PECK. Yes; I think it's a very important program.

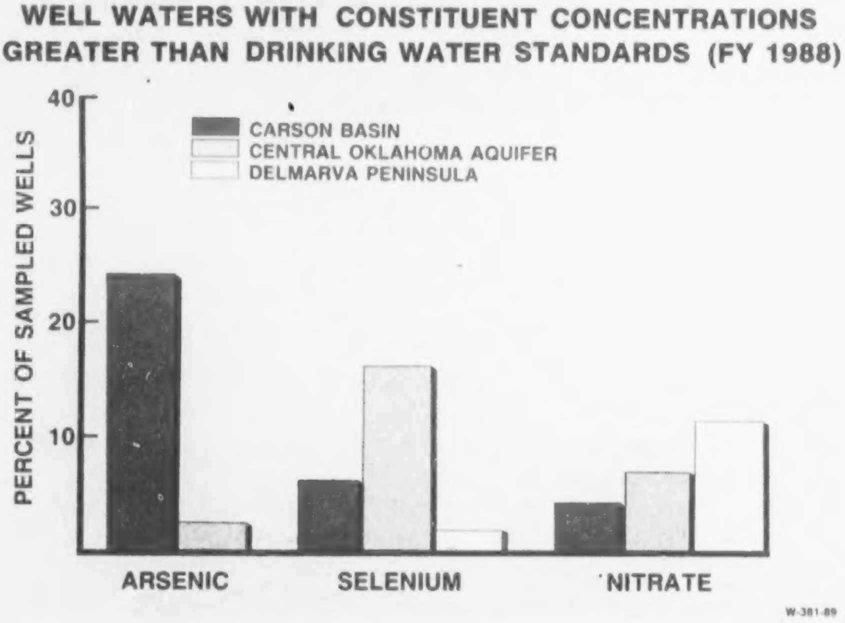
Senator REID. It's about $12 million above last year. And on page 253 of your justification, you recommend that 1991 be the first year of a multiyear transition from the pilot program to the full-scale national program. The pilot program is to be completed in 1991. I understand Carson Basin of western Nevada and eastern California is one of the seven ongoing pilot projects.

Dr. PECK. That's right, Mr. Chairman.

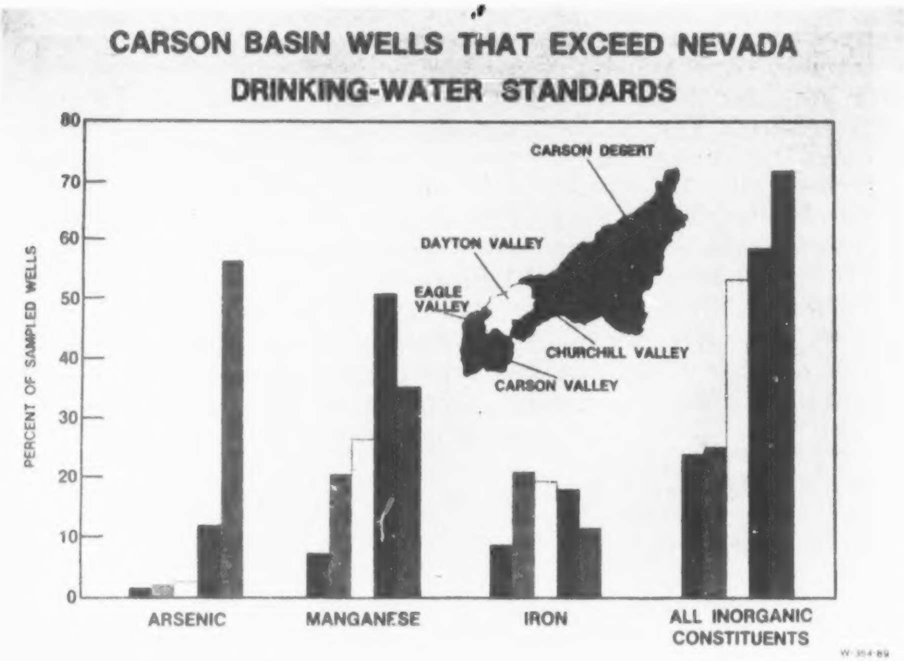
Senator REID. Do you or Mr. Cohen have any information that's been gathered relative to the Carson Basin ground water study?

Mr. COHEN. Yes; we have several charts to put up which provide data on the Carson study.

Incidentally, Mr. Chairman, if, in fact, the Congress approves the administration's request and this program becomes operational, we will initiate studies in 20 basins throughout the United States for the first phase, one of which will be Clark County in the Las Vegas basin for both ground water and surface water. In the pilot phase in the Carson-Truckee we focused mainly on ground water, which I think is very relevant to your interests and your bill. Again in the operational phase we would continue on in the Truckee-Carson doing the surface water component.



Dr. PECK. That graph compares the level of arsenic, selenium, and nitrate in waters from three of the study areas, all ground waters in the study areas. And as you can see, arsenic is indeed a problem in the Carson basin and that relates to the mineralization which is provided by mineral deposits.



CARSON BASIN WELLS THAT EXCEED NEVADA DRINKING-WATER STANDARDS

Mr. Cohen. Here's another one which focuses only on the Carson-Truckee——

Senator Reid. That's very descriptive, but we've had problems with arsenic for 20 years.

Dr. Peck. Yes.

Senator Reid. I mean, it's been there forever. We've just known about it——

Dr. Peck. Another thing is the mercury, of course, which comes from the gold processing.

Senator Reid. We're also working on that with Superfund.

Dr. Peck. This shows the abundance in water of arsenic, manganese, iron, and all inorganic constituents, and the colors are keyed to that map, which starts up at the lower left in the Carson Valley and the right goes down to the Carson sink.

And as you can see some of those constituents, particularly the total dissolved solids, becomes much higher as you approach the Carson sink.

Senator Reid. Very interesting.

Mr. Cohen. So those very large blue bars represent in a general way the water quality problems associated with the Stillwater Wildlife Refuge and some of the crops also.

Senator Reid. I appreciate that very much. If you don't have any use for those charts later on, maybe you could loan them to me.

Dr. Peck. I'd be happy to and provide some photographic copies.

Senator Reid. That would be just as well.

Dr. Peck. Good.

Senator Reid. What activities are to be undertaken to complete the seven pilot projects in fiscal year 1991?

Dr. PECK. Most of the field activities associated with the intensive study phase in the seven pilot projects will end in fiscal year 1990. In fiscal year 1991 resources will be used to complete project reports and begin selected activities to detect long-term changes in water quality; continue developing water-quality models for parts of the upper Illinois and Yakima River basins; complete the testing of protocols for conducting ecological surveys and tissue analysis; and continue developing and refining concepts for integrating surfacewater and groundwater assessment activities in the Delmarva Peninsula.

Senator REID. They would become permanent under the national program.

Dr. PECK. Yes; our plan is to intensively study an area like the Carson-Truckee for 4 or 5 years and then to decrease the level of effort to monitoring and pick up that effort again in another 5 years or so. So that at any one time we'd be intensively studying 20 study areas and in total we would study 60 areas. This way would be the best use of the available funds to get a handle both on the local quality but also the trends through time.

Senator REID. What are the key water quality issues associated with the seven studies?

Dr. PECK. In the Carson basin, pesticides such as DDT are a concern, as well as nutrients in areas that receive irrigation return flows, resulting in the growth of nuisance algae. The key water-quality issue in the Delmarva Peninsula study area is contamination by nitrates and herbicides. In the Kentucky River basin, studies have focused on bromide and the formation of trihalomethane, which is linked to discharge of brines produced by the oil and gas industry. In the upper Illinois River basin, studies have focused on pesticides, volatile organic compounds, and PCB's in sediments and fish tissue, as well as poor sanitary quality caused by low concentrations of dissolved oxygen. In the lower Kansas River basin, contamination by herbicides such as atrazine is a concern, as well as a decrease in suspended sediment due to soil conservation and runoff-control activities. Studies in the central Oklahoma aquifer have focused on trace elements and natural radioactivity, and on pesticides used for termites and weed control. I would be pleased to provide more detailed information for the record.

[The information follows:]

SUMMARY OF KEY WATER-QUALITY ISSUES FOR EACH OF THE SEVEN PILOT NAWQA PROJECTS

CARSON BASIN

Trace elements and natural radioactivity

A number of naturally occurring inorganic constituents are of concern in ground water throughout the Carson Basin. These include trace elements (particularly arsenic) and natural radioactivity. Exceedances of drinking-water standards for the trace elements tend to be more prevalent in the downstream portions of the basin as a transition is made from granitic source rocks to lacustrine deposits. For example, more than 50 percent of the sampled wells exceed the Nevada drinking-water standard for arsenic in the Carson Desert, the furthest downstream valley.

Radon concentrations exceed 500 pCi/L (picoCuries per liter) in most of the ground water in the Carson Basin, with the highest concentrations, which locally exceed 14,000 pCi/L, in granitic rocks and their sedimentary derivatives. In the Carson Desert, uranium concentrations locally exceed 1,000 pCi/L in shallow ground water. Although drinking-water standards do not presently exist for these constituents, the levels are unusually high and may exceed standards currently underreview.

DELMARVA PENINSULA

Nitrates and herbicides

Key water-quality constituents that are being examined in ground water underlying the Delmarva Peninsula are nitrates and herbicides. The sources of nitrate include septic systems, animal wastes, and fertilizers. Agricultural activities are the primary source of herbicides. Agriculture is the most prevalent land use, comprising about half the land area.

An extensive analysis of the existing data on nitrate has indicated that elevated nitrate concentrations are prevalent in the surficial aquifer. For example, about 18 percent of the samples of shallow ground water from the Delmarva Peninsula exceed the U.S. Environmental Protection Agency (EPA) drinking-water standard of 10 milligrams per liter of nitrogen. The standard is based on concerns that excessive nitrate can cause methemoglobinemia (blue babies) in infants. The elevated nitrate concentrations exist in both urbanized areas (from septic systems) and in agricultural areas (from fertilizers and animal wastes). Ongoing studies of the relations between both land use and hydrogeology and the quality of ground water will be used to help locate problem areas.

The prevalent use of pesticides, the shallow depths to the water table, the high permeability of the soils, and the high rates of recharge are favorable conditions for the migration of pesticides to ground water. At the outset of the NAWQA Program, however, very few data existed to assess the extent of pesticide contamination, if any, on the peninsula. The data collected thus far indicate that very low levels of herbicides are common in the top part of the shallow ground-water system throughout the peninsula. The concentrations are at very low levels; virtually all samples have been less than Health Advisories established by EPA. The data indicate a need for long-term sampling of shallow ground water to monitor pesticide levels in future years.

KENTUCKY RIVER BASIN

Compared to some of the other pilot project areas, there are relatively few significant water-quality issues in the Kentucky River basin. For example, sanitary quality issues (low dissolved oxygen, nutrient enrichment, and fecal contamination) occur sporadically and are of limited areal extent.

Bromide and trihalomethane formation

Large bromide concentrations in streams in the Kentucky River basin occur during low flows in summer and fall and are strongly linked to the discharge of brines produced by the oil and gas industry. Large concentrations of bromide are a concern because of their role in the formation of potentially carcinogenic trihalomethane (THM) compounds, such as bromoform, the drinking water supply for Lexington, Kentucky. THM's are formed during the disinfection of water supplies. Chlorine, and similar ions such as bromine, react with natural organic substances to form THM's.

The Maximum Contaminant Level for total THM's in drinking water is 0.10 mg/L (calculated as a 12-month moving average). Although the 12-month moving average concentration of THMs in the Lexington water supply has not exceeded the MCL during low-flow conditions, THM concentrations in individual finished water samples have exceeded 0.10 mg/L.

UPPER ILLINOIS RIVER BASIN

Pesticides and other synthetic organic compounds

A wide variety of potentially toxic pesticides and other synthetic organic compounds have been detected in the water, sediment, and fish from streams in the Upper Illinois River basin.

Large concentrations of herbicides such as atrazine occur in the agricultural parts of the basin. Atrazine use in parts of the Upper Illinois basin is among the largest in the United States. Large concentrations of lawn and garden insecticides (e.g., diazinon) and herbicides (e.g., 2,4-D) have been found in urban and suburban catchments.

Small concentrations of volatile organic compounds were detected in streams in the urban part of the basin. Most of the compounds detected have chlorine as part of their structure suggesting that they may be associated with the disinfection of sewage effluent.

Large concentrations of PCB's have been detected in the sediments and fish tissue from streams in the Illinois Waterway by USGS and State agencies. Concentrations in a significant number of fish samples exceeded the Food and Drug Administration action level of 2 parts per million. At this level, people are cautioned by the States not to eat the fish.

These findings indicate that there are many different potentially toxic substances in the water and sediment of the Upper Illinois River originating from many different point and nonpoint sources. While some of these sources may be reduced through the use of best management practices and educational programs targeted at the application of pesticides in urban and agricultural areas, other sources (e.g., PCB's and other toxicants in bed sediments) may be long-term sources of contamination.

Sanitary quality

During low-flow conditions, concentrations of dissolved oxygen (D.O.) often do not meet State criteria. Lowest D.O. concentrations typically occur at the confluence of the Chicago Sanitary and Ship Canal with the Des Plaines River. During low flows, most of the streamflow in this reach is effluent from the Stickney wastewater-treatment plant (800MGD), the second largest treatment plant in the world.

Possible explanations for the low D.O. concentrations include: (1) the wastewater-treatment plants were not meeting their discharge requirements; and (2) the waste load allocation process overestimated the assimilative capacity of the stream for biodegradable wastes, and current treatment levels are not adequate to meet the criteria.

LOWER KANSAS RIVER BASIN

Herbicides

Atrazine, one of the most widely used herbicides in the United States, is one of several pesticides that have been observed at significant concentrations at a large number of locations in streams of the lower Kansas River basin. For example, atrazine concentrations during a spring runoff event in 1987 from intensively cultivated cropland in the west Fork Big Blue River ranged from 1.7 to 19 ug/L (micrograms per liter). The median concentration was 9 ug/L.

During a low-flow synoptic survey of about 50 sites in 1988, atrazine was detected at all of the sampling locations and in larger concentrations than other widely used herbicides. At about one-third of the locations, concentrations of atrazine exceeded 3 ug/L, EPA's proposed lifetime health advisory level.

Monthly concentrations of atrazine at the outflow of Perry Lake, a major Federal reservoir used for public water supply, ranged from 3.8 to 7.0 ug/L. These findings indicate that some of these herbicides are widely distributed in stream systems and can occur at very large concentrations at times during the year. Further, these water-soluble herbicides are not removed during conventional water-treatment practices and thus, may pose a significant risk to human health.

Suspended sediment

Analyses of available data show that flow-adjusted concentrations of suspended sediment are decreasing throughout the basin, suggesting that implementation of soil conservation and runoff-control activities (terracing, reduced tillage, farm ponds, and small reservoirs) is resulting in less soil erosion.

Suspended sediment is one of the principal substances of concern in the control of agricultural nonpoint source runoff. Sediment loads may: (1) reduce the waterstorage capacity of reservoirs for water supply and flood control; (2) impair stream habitat for fish propagation and other aquatic life; and (3) act as a mechanism for transporting nutrients, and potentially toxic trace elements, pesticides and other synthetic organic compounds.

CENTRAL OKLAHOMA AQUIFER

Trace elements and natural radioactivity

Common water-quality problems in ground water of the Central Oklahoma aquifer are associated with elevated levels of trace elements and natural radioactivity. For example, analysis of existing data indicated that arsenic, selenium, and natural alpha radioactivity exceeded EPA drinking-water standards in about 4, 12, and 12 percent, respectively, of the samples. Many of the higher concentrations are associated with deeper ground water. Ongoing activities within NAWQA are directed at understanding the causes of the elevated levels and the ways in which elevated levels might be avoided in the drilling of future wells by the local municipalities.

Pesticides

Pesticides were detected in about 11 percent of the wells sampled through the Central Oklahoma aquifer, with the highest frequency of detection of pesticides in the urban area of Oklahoma City (about 27 percent of the wells sampled). Most of the detections were pesticides commonly used by homeowners. Only one of the 19 wells with pesticide detections in the Central Oklahoma aquifer had one of the triazine herbicides (atrazine) commonly associated with agricultural practices. The most common occurrences were dieldrin and chlordane (used for termites) and 2,4-D and prometone (used for weed control). Rechecking with the homeowners of the wells indicated that, in many cases, the pesticides detected were recently used by the homeowner or stored near the wellhead. These results suggest that strategies to protect ground water from pesticides should focus on the urban as well as agricultural user.

YAKIMA RIVER BASIN

Pesticides

During the irrigation season and during periods of high sediment erosion, concentrations of the organochlorine insecticides DDT and its metabolites and dieldrin in the water and sediment in the lower part of the Yakima River basin frequently exceed EPA chronic toxicity criteria (and Washington State standards). Use of DDT and dieldrin was banned in the early 1970's. The EPA chronic toxicity criteria for DDT and metabolites and dieldrin are 0.001 and 0.0019 ug/L, respectively.

The amount of DDT remaining in the soils, particularly in and around apple orchards, is large. Crude estimates of pesticide transport indicate that less than 1 percent of the pesticides in storage are transported from the basin each year. Thus, even though the use of these compounds was banned almost 20 years ago, water-quality standards may be exceeded for many years to come.

Nutrients

Large concentrations of dissolved nutrients in the lower reaches of the Yakima River that receive irrigation return flows has resulted in considerable growth of nuisance algae which has an impact on the asthetic appeal of the river for recreational use. It is generally believed that the principal factor limiting additional algal growth is water turbidity, which limits light penetration needed for photosynthesis.

The implications of these findings are that agricultural best management practices will need to include removal of dissolved nutrients in addition to the removal of sediment. If only the sediment is removed, it would result in reduced stream turbidity and could result in increased growth of nuisance algae.

Senator **Reid**. Your budget justification indicates that when the national water quality assessment program is fully implemented it will require annual appropriations of about $60 million and will be comprised, as has been indicated by Mr. Cohen, of 60 combined surface water and ground water study units.

Are you proposing to jump from a $7 million pilot program in 1990 to a $60 million level in 1992?

Dr. **Peck**. No; we're proposing an increase, the ramping up of the funding over a period of 4 years. And so I think that we are considering a far more modest increase for the next fiscal year.

Senator **Reid**. Would you provide a 10-year funding table for the record?

Dr. **Peck**. Yes, sir; I would be happy to provide a funding table for the record.

[The information follows:]

Ten-year funding table for national water-quality assessment program

Fiscal year	*Total*
1991	$18,000,000
1992	28,000,000
1993	42,000,000

Ten-year funding table for national water-quality assessment program—Continued

Fiscal year	Total
1994	53,000,000
1995	61,000,000
1996	61,000,000
1997	61,000,000
1998	61,000,000
1999	61,000,000
2000	61,000,000

Senator REID. Would increases for this program have any implications for your other water data collection programs and their funding levels?

Dr. PECK. The NAWQA Program is feasible at the above funding levels only because existing programs provide a sound, long-term data collection base. It will differ from past and present programs in the emphasis placed on various approaches and in its overall structure. When fully implemented, it will not replace existing programs because there will continue to be need for programs focused on different temporal and spatial scales. However, the NAWQA Program will lead to modifications of USGS water-quality programs; for example, data collected at NASQAN sites in NAWQA study units will be coordinated with other data collected as part of the NAWQA projects. In addition, the NAWQA Program will identify local problem areas that would be candidates for investigation under other programs of the USGS, such as the Federal-State Cooperative Program and the Core Program Hydrologic Research. As the Regional Aquifer System Analysis Program is completed over the coming years the associated resources will be available to assist in financing NAWQA and related efforts.

Senator REID. Under this proposal, what year would you consider the National Water-Quality Assessment Program fully implemented?

Dr. PECK. The NAWQA Program will be fully implemented in fiscal year 1997 when all 60 study units are in progress.

Senator REID. What information would these study units provide that we do not currently have?

Dr. PECK. In addition to the findings that will be useful to water managers within each unit, information from the individual study-unit investigations will be aggregated to provide unique information necessary to address topics of regional and national importance. This information will be provided in topical reports that will be prepared every year, beginning near the completion of the first set of 20 study-unit investigations in fiscal year 1995. During most years, these reports will focus on a specific water-quality issue. The selection of water-quality topics addressed will be heavily influenced by the information needs of other Federal agencies. For example, reports during the early years of the program are likely to focus on topics associated with agricultural sources of surfacewater and groundwater contamination such as: occurrence and concentrations of pesticides in groundwater and surface in relation to human and aquatic health criteria; relation of pesticide occurrence in groundwater and surfacewater to pesticide application rates, cropping practices, and climatic, geologic, and soil factors; effects of agricultural best-management practices [BMP's] on surfacewater and groundwater quality; and relative magnitudes of various point and nonpoint source contributions to different types of surfacewater and groundwater contamination.

Senator **Reid**. To whom will this information be useful and how will it be used?

Dr. **Peck**. Over the coming years we see the NAWQA Program shedding new light on a range of major water-quality issues, including: (1) the extent and severity of surfacewater and groundwater contamination from pesticides; (2) understanding the effects of agricultural best-management practices [BMP's] on water quality; and (3) the relative magnitudes of point and nonpoint sources of contamination in different areas of the country subject to different land uses. This type of information will assist local, State, and Federal agencies and the private sector in focusing preventive and corrective efforts on problems and in areas of greatest need. In the longer term, NAWQA will provide an information base that will be useful in determining the extent to which the desired results of these preventive and corrective efforts are being achieved.

The extent and severity of surfacewater and groundwater contamination from pesticides in the United States is unknown. The NAWQA Program will provide considerable information on the degree of contamination of groundwater and surfacewater by many potentially toxic substances for which few data currently exist. Information to identify those stream segments and parts of the groundwater resource with prevalent pesticide contamination and those parts relatively free of pesticide contamination will be useful to other agencies and the private sector for targeting both prevention and response efforts and for assessing progress in managing different pesticides. In addition, the studies will reveal and explain trends in water quality. The ability to detect and explain trends, made possible by the perennial nature of the program and the long-term presence of USGS scientists in each State, is a vital aspect of any attempt to manage water resources.

Information on the factors affecting groundwater and surfacewater contamination by pesticides in different areas will be useful for: developing effective strategies for preventing and responding to pesticide contamination; evaluating whether pesticide regulations can be targeted to geographic regions or hydrologic settings rather than using rigid nationwide standards that may overprotect the resource in some areas and underprotect it in others; and developing more efficient monitoring strategies.

Information relating water-quality conditions and changes in these conditions to uses of BMP's—such as no-till and contour farming—and other environmental factors will be useful to the States, the Department of Agriculture, EPA, and farmers for determining the effectiveness of different BMP's under different hydrologic settings and conditions and considering their use for controlling nonpoint sources of pollution.

The States and EPA generally recognize that available programs and information are insufficient to determine the magnitude and extent of nonpoint-source contamination problems and to pinpoint the primary causes of these problems. A major emphasis of NAWQA is on providing information on nonpoint-source contamination, which will help the States to identify critical areas on which to focus their nonpoint-source management efforts. Information on the relative magnitude and extent of different types of nonpoint-source contamination nationwide, as well as on a regional basis, will help EPA to allocate budgetary resources efficiently under section 319 of the Water-Quality Act of 1987.

WATER RESOURCES COOPERATIVE PROGRAM

Senator **REID**. The Federal/State cooperative program of the water resources investigations provides for opportunities to address emerging national water issues to the benefit of the Geological Survey and more than 1,000 cooperating agencies. You estimate that about $76.5 million of a 50/50 matching fund will be offered by the States in 1991. I understand your request to OMB was about $63 million and then OMB cut the level further to $56 million for 1991.

This is a popular, highly competitive and effective program. What effects will the decreased funding have on your program?

Dr. **PECK**. At the present time we're not able to carry out projects on a matching basis that are offered by the States to the tune of some $10 to $20 million. This will mean some specific projects just won't be started.

I think Mr. Cohen can probably amplify that.

Of course, in Nevada there's some cooperative projects being considered—now Searchlight is not a problem—being considered that simply won't be started.

Mr. **COHEN**. There is an exhibit in the budget justification which shows the detail to some degree of the shortfall between that which would be appropriated and that which is being cut. And the difference is, as you indicated, about $20 million.

In Nevada, for example, we estimate that the State and local offerings are in fact, in the current fiscal year about $600,000 above that which we are able to match.

So that we have cooperative funds going into Nevada that, in the current fiscal year, amount to approximately $1.2 million. Assuming that this proposed reduction is prorated roughly equal across the country, that those moneys would be somewhat less in fiscal year 1991.

At the same time we estimate increased offerings from the State of Nevada, something on the order of $700,000—that's also shown in the budget justification—over and above the funds available to us for us to match offers from State and local agencies.

Senator **REID**. What would you do with the additional $6,984,000 that was in your budget request to OMB?

Dr. **PECK**. Much of the growth in State and local government interest in the Federal-State Cooperative Program involves requests or assistance in addressing water quality problems and issues. The funding requested of OMB was intended to enable support of additional cooperative investigations primarily related to water quality, especially investigations associated with the President's water quality initiative, and management and protection of groundwater quality.

Senator **REID**. Would this be a high priority area for you if Congress were going to add funds to your budget?

Dr. **Peck**. Yes; the Federal-State Cooperative Program is a high priority program.

Senator **Reid**. Given the importance of this program and the multiplying factor that's involved with the cuts, I'll work with the chairman on additional funding. This entire water research area is important to the entire country, not only to Nevada. It is an important program.

I have been involved with my own State's water problems and these problems are severe, as they are in a lot of the United States. We're coming into a situation all over the country where water is becoming certainly more important than people originally thought.

For example, Nevada is largely a desert State, and what is not desert has suffered along with much of the rest of the Nation through a series of droughts.

Nevada is a prime example of why this cooperative program should continue. The northern part of Nevada is currently addressing its water problems. I am hopeful that cooperation among local users and the Federal Government will bring a long-term solution to northern Nevada's water problems.

We hope the solution for the north is near, largely though because of necessity. Southern Nevada has just begun to look at its water problems. Efforts are being made ahead of absolute necessity.

The State water resources program is essential to continuing and promoting efforts in advance of emergency conditions all over the western United States. And I'm sure, as one of your charts showed, all over the United States, not just in the west.

WATER RESOURCES RESEARCH INSTITUTES

Your budget request proposes to cut the funding in half for each of the 54 State water resources research institutes from $104,000 to $52,000. This is a very small amount of money, but to the States involved, it is significant. The total decrease proposed is $2,875,000. Congress has consistently rejected your yearly proposals for reductions in these programs.

Your budget justification—on page 282—offers no explanation for this reduction. Why are the funds cut in half? What is the rationale?

Dr. **Peck**. The overriding importance of addressing the Federal deficit problem requires that expenditures be reduced in a number of programs, including the Institutes and Research Grants Programs.

Senator **Reid**. Dr. Peck, how many scientists receive training through this program each year, do you know?

Dr. **Peck**. Well I would guess several hundred. It's a very important role in education. The institutes have been going for over 20 years, since the late sixties.

Senator **Reid**. Dr. Cohen, don't we need more hydrologists?

Mr. **Cohen**. Yes, sir; we do.

Senator **Reid**. And, this program is a useful tool for attracting students to the profession, is that fair?

Mr. **Cohen**. Absolutely.

Senator **Reid**. I mean it's obvious we need scientists every place and water resources is no different.

Dr. **Peck**. Actually I think the need in water resources is greater than in many other fields of science, as a matter of fact, because of concern about water pollution.

Senator **Reid**. All over the world.

Dr. **Peck**. Yes.

Mr. **Cohen**. I think the very first Water Resources Research Institute was the one in Reno, the former Desert Research Institute, which was in place when the act was passed in 1964 and Nevada was right out front—among the first.

Senator **Reid**. I appreciate your recognizing that. A lot of the work that, for example, has developed in Israel with some of their irrigation processes was developed at the University of Nevada.

Dr. Peck, it's my understanding this program is operated under a cost-sharing arrangement of 2 to 1 with the States. And would you acknowledge that this program is an efficient way for the Nation and the State to address water quality issues?

Dr. **Peck**. Yes; I do.

Senator **Reid**. And don't you believe this is a good opportunity for you to work closely with the Institutes toward common priorities and avoid duplication of efforts?

Dr. **Peck**. Yes, indeed.

Senator **Reid**. I believe this program provides an economical, coordinated means of addressing the many water resource problems that face our Nation today. Collectively, we can move forward to resolve State and regional water and related land problems. So I intend to work hard to continue the funding level for this program in the coming year.

ADDITIONAL COMMITTEE QUESTIONS

Dr. Peck, we have a series of questions dealing with a number of other programs, including the women and minorities program, that should be an integral part of your regular program of work. We have submitted these questions in writing and we would ask that you respond to these questions within the next 3 weeks, so we can get the budget cycle moving along.

Dr. **Peck**. We'd be pleased to.

Senator **Reid**. I appreciate, Dr. Peck, your testimony, your cooperation today and in the past. I appreciate the help of your colleagues and look forward to working with you in the future.

Dr. **Peck**. Thank you.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Global Climate Change

Dr. Peck, the justification states that your Climate Change subprogram is an integral part of the U.S. Global Change Research Program plan which was developed by the interagency Committee on Earth Sciences. The Geological Survey's Climate Change Program began its expansion in FY 1990 and appears to be a major contributor to your total increased request. The FY 1991 request is $9.7 million which is $6.7 million (2.25 times) more than your FY 1990 program.

Question: What research is presently underway?

Answer: In FY 1990, a total of 19 research projects are underway as part of the USGS Climate Change Program. Examples of these projects are listed below and are aimed at the following topics:

1) Understanding the contribution of gas hydrates, especially methane, to the "greenhouse gas" component of Earth's atmosphere. Of particular interest is methane trapped in and below permafrost in polar regions. Research is aimed at improving estimates of gas volumes stored in permafrost regions and at estimating amounts of gas that may be released to the atmosphere if global warming occurs and permafrost begins to melt in high latitude regions.

2) Monitoring permafrost temperature profiles. Permafrost responds to climate change by temperature changes that can be monitored in boreholes in permafrost. USGS is the world's leader in this methodology and technology. USGS methods are being adopted by Canada, USSR, and other nations. Monitoring permafrost temperatures provides information about the climate history of high latitudes during the past century, and provide a data baseline that will permit documenting the onset of future climate changes in high latitude regions that are particularly sensitive to climate change.

3) Paleoclimate reconstruction of past global warming events that can provide important insights into the consequences of future climate changes. USGS is the leader in a rapidly growing international effort (U.S., USSR, Canada, Iceland, UK, Japan) to reconstruct global climates about 3 to 4 million years ago when global mean annual temperatures rose by about 3 or 4 degrees C. Such warming events are of a magnitude that has been predicted by some climate models for the next century as a result of the "greenhouse effect." This valuable data set will be used to test and improve General Circulation Models that are currently being used to predict the future consequences of rising concentrations of "greenhouse gases" in the atmosphere.

4) Research began in FY 1990 to collect and analyze high- resolution records of past climates preserved in the geologic record in annually layered corals and certain marine sediments and lake sediments that preserve annual layers. Such records are valuable for understanding short-term climate variability (inter- annual, decadal, century-scale) back in time beyond the past century's instrumental meteorological records. These records will focus in particular upon the past 1000 years of climate history.

5) Research is underway to improve understanding of the relationships between climate, vegetation, the character of soils and surface sediments, and erosion susceptibility in arid and semi- arid regions of the U.S. Information from this research will permit improved assessments of the probable environmental consequences of future climate changes in arid and semi-arid regions. Reconstructions of past climate changes in arid and semi-arid regions provide a further basis for anticipating the effects of similar climate changes in the future.

6) Research has begun, in cooperation with the Geological Survey of Canada to reconstruct past climates and environments in northwestern North America during the past 10 million years or so. This research is aimed at improving understanding of the possible consequences of future climate change (e.g., global warming) upon the sensitive environments found in high latitudes.

7) Research is under way to monitor changes in iceberg calving rates of coastal glaciers of Antarctica. Antarctic glaciers may be very responsive to climate change, and changes in iceberg calving rates of the major glacier systems that rim the Antarctic continent may effect the rate at which global sea level is rising Sea level rise has important economic consequences for most coastal nations of the world.

Question: What benefits will be realized from the increased request?

Answer: Some of the benefits to be derived from the in- crease in USGS research on global change and climate change are mentioned briefly in the answer to the previous question.

Government decision makers in this Nation and in other nations of the world are faced with many difficult policy questions that arise from global change issues. Decisions effecting burning of fossil fuels, efficiency of automobile engines and other appliances, use of water resources, land use, and a myriad of other decisions will have to be made in the context of a very uncertain future climate. Scientific consensus is quite strong that the observed increases in "greenhouse gases" in the atmosphere will lead to an eventual warming of Earth's climate. There is no strong consensus, however, about how rapidly warming may occur, or if it has already begun. The magnitude of eventual warming is unknown, but current information suggests it may be as much as several degrees Celsius. The economic costs of even brief weather events such as hurricanes and droughts are enormous. The potential economic costs of a significant global climate change are likely to be vastly greater. It is, therefore, cost effective to invest funds now to improve understanding of the complex global systems that sustain life on Earth. Improved understanding of those systems, and how they interact, will lead to improved ability to anticipate the probable consequences of future climate changes and to identify human activities that have the potential for contributing to climate change or otherwise alter the global environment. Armed with that improved knowledge of both natural and man-influenced changes in climate and the environment, decision makers will be able to be more confident that the policy decisions that are made are likely to be beneficial to society and cost effective.

Specific examples of benefits to be derived from USGS Climate Change Program research include:

1) Improved understanding of how rapidly climate can change, based upon high resolution studies of the history of past climate changes preserved in the geologic record.

2) Improved understanding of natural variability of climate on all time scales (interannual to millions of years). Such understanding is important for discerning natural variations in climate from variations or changes influenced by human activities.

3) USGS research will contribute paleoclimate data sets that will be used to test and improve General Circulation Models. Improvement of GCMs will result in more reliable predictions for future response of the global climate system to increases in "greenhouse gases."

4) USGS research on methane and other gas hydrates will lead to an improved estimate of the potential volume of methane (an important greenhouse gas) that may be released to the atmosphere if global warming begins to melt permafrost in polar regions.

5) USGS permafrost temperature monitoring will refine understanding of the recent history of climate changes in polar regions (the past century), and will provide a data set that will be a valuable basis for documenting future onset of climate changes in high latitude regions.

6) USGS research on arid and semi-arid region climates will improve understanding of the impact of climate change and weather variability, past, present, and future upon vegetation cover, soil properties, and susceptibility of soils and surficial sediments to wind erosion in such regions. Lessons learned in these regions have application to assessing consequences of future climate changes upon

regions that may be particularly sensitive to future changes in precipitation patterns, e.g., the Great Plains of the U.S.

7) USGS research on paleoclimates will provide a very valuable basis for anticipating the consequences of future climate changes upon the environment at the regional scale. Current General Circulation Models are unable to make regional scale predictions of the effects of future global-scale climate changes.

8) USGS monitoring of Antarctic coastal glaciers by means of remote sensing methods will permit USGS to determine whether or not the rate of iceberg calving has changed over the past ca. 20 years, and will provide a basis for determining future rates of calving. Antarctic glacier response to global climate changes in the future is uncertain at present. Rapid calving rates could contribute to an increased rate of sea level rise.

The Global Change Data System is proposed at a $7.1 million level for FY 1991. This same program was funded at $3 million for FY 1990 - a 140% increase. I understand that funds received in this program are intended to be used for further development of the Land Data and Information Management System.

Question: Is the Land Data and Information Management System the major portion of the $7.1 million request?

Answer: The Global Land Data and Information System accounts for approximately 50% of the increase and over 70% of the total funding requested in the Global Change Data System program element for FY 1991.

Question: What activities are currently taking place in its development?

Answer: Three major activities are taking place:

1. Landsat Data Maintenance and Conversion: Transfer one million Landsat scenes acquired from 1972 to the present from deteriorating magnetic tapes to durable archive media. Develop systems to geometrically and radiometrically correct and process these data. Maintain all Landsat data and other satellite data in environmentally controlled archives.

2. Data set Development, Processing, and Distribution: Identify, characterize, process, and distribute land data sets for use by the earth science community, process sensor data to increase their utility to global change studies, and integrate and distribute global and continental land data sets.

3. Global Land Information System: Design, develop, and implement a principal online node of the National Global Change Data and Information Management System being defined and coordinated with the Interagency Working Group on Data Management for Global Change. The system will include land data directory, catalog, and inventory systems and external interfaces to information systems and archives at remote locations.

Question: What will the proposed $2 million increase in the Land Data and Information Management System buy us?

Answer: Funding increases in this activity will accelerate the conversion of Landsat data, will provide improved access to land-related earth science data stored at locations worldwide, and will provide new and improved data sets for use by the global change research community.

Question: Are other agencies involved in this endeavor?

Answer: Development and implementation of the Global Land Data and Information System is coordinated with the Interagency Working Group on Data Management for Global Change and the Committee on Earth Science. Specific master data directory activities are coordinated with the National Aeronautics and Space Administration and the National Oceanic and Atmospheric Administration to ensure ultimate compatibility of Land, Atmosphere, and Ocean Directories.

Question: When will the system be in place?

Answer: The current time table anticipates that part of the system will be operational in FY 1992, and the full system operational in the mid-1990's.

Question: Who will be able to access the system?

Answer: The system is designed to serve the global change and other earth science research communities so it will have capabilities allowing access by international and federal organizations, universities, and other data management or research centers.

In your FY 1991 budget justification, the Global Change Hydrology component of your Climate Change Program is increased $5 million over the FY 1990 level of $2 million.

Question: Would you briefly tell me what activities are planned for the increase?

Answer: The increase will support several new initiatives. The first is a program of intensive field investigations designed to improve understanding and prediction of responses of terrestrial hydrologic systems (i.e., surface water, ground water, and soil moisture) to changes in atmospheric conditions. The second is a series of watershed studies to be conducted jointly with the Bureau of Reclamation that focus on the assessment of the sensitivity of hydrologic and water resource conditions in the western United States to climatic variability and change. The basins to be jointly studied are the American/Stanislaus (California), Carson/Truckee (Nevada), and Gunnison (Colorado). In addition, enhancements will be made to existing research activities that are attempting to improve the representation of terrestrial hydrologic systems in fully coupled land-atmosphere models, such as general circulation, mesoscale climatic, and global carbon cycle models. This work is being conducted in collaboration with climate modeling centers at NOAA's Geophysical Fluid Dynamics Laboratory and the National Center for Atmospheric Research.

Question: Your justification for Global Change Hydrology (page 262) indicates you are working on 18 research studies for FY 1990. In FY 1991 the number increases to 25. Why does the number of studies increase only by 7 for a $5 million increase?

Answer: The primary reason for the large increase in funds relative to the number of projects is that the FY 1990 Global Change Hydrology Program is the first year of a planned multi-year program expansion that builds on existing strengths and capabilities of the USGS. Therefore, most of these projects are currently funded at very modest levels, but are planned to undergo progressive expansion. The FY 1990 program consists of 18 relatively small research studies (with funding generally less than $100,000 each), concentrated primarily in the Water Resources Division's National Research Program. In FY 1991, the $5.0 million increase will facilitate the enhancement of these very modestly funded projects as well as the addition of a few larger and more comprehensive studies involving a significantly large role for the Geological Survey's District Offices. Several of these seven new research studies will involve expanded data collection activities, monitoring equipment, and detailed modeling exercises. Some of the new work for FY 1991 will be conducted in remote snow and ice-covered environments where work is substantially more costly than most USGS field studies. Among the new projects planned for FY 1991 are studies of the sensitivities of water resources to climate change. These studies will involve extensive data analysis and modeling of the climate and hydrology of large western United States river basins.

Groundfault and Landslide Hazards

West Virginia, and a number of other states, especially those on the West Coast are extremely susceptible to landslides. Last year's budget justification pointed out that West Virginia ranked among the top eight states in terms of susceptibility to groundfaulting hazards.

Question: What activities is the Geological Survey pursuing in this regard in West Virginia?

Answer: In FY 1990 the Geological Survey is completing a study of landslides triggered by the storm of November 3-5, 1985, in the central Appalachian Mountains of West Virginia and Virginia. Flooding and landslides in this storm caused at least 70 deaths and an estimated $1.2 billion in damages. A part of this landslide study which is being conducted near Wills Mountain, West Virginia, has helped to define the meteorologic conditions leading to landslides and the relative importance of land cover, bedrock, surficial geology, and geomorphology where landslides occurred. Findings from this study will be useful for land use planning as well as for planning emergency response in future storms.

Question: Are any projects planned for FY 1991 in the central Appalachian Mountains; and if so, what will you be doing?

Answer: No new projects are planned in this region during FY 1991. With completion of the landslide study in West Virginia and Virginia described above, efforts will be made in FY 1991 to complete reports and to transfer the information to local governments for application.

Question: What activities will you pursue elsewhere in the country?

Answer: In FY 1991 regional landslide assessments will continue in northern California in the area severely affected by the October 17, 1989, earthquakes. In the city and county of Honolulu, Hawaii, study of both rapidly and slowly moving landslides will be nearing completion. In southern California, in cooperation with State and local governments, regional landslide hazard assessments and studies of the probability of climatic and seismic triggering of landslides will be continuing in an area subject to rapidly moving landslides from extremely intense storms as well as strong earthquakes. Although no new State landslide susceptibility maps will be initiated, efforts will continue, such as those studies underway in Puerto Rico and Vermont, to develop new improved statistical and probabilistic methods that can be applied to produce State susceptibility maps. Studies of individual landslides in Utah and Colorado will be conducted to provide information on the effects of climatic cycles on movement and reactivation of large landslide deposits. Continuing efforts will be underway to refine the landslide warning system in operation in the San Francisco Bay region, California, and to apply this technology elsewhere.

Question: How are your findings in this program being transferred to local governments for their use?

Answer: Findings from the landslide program are transferred to local governments in a variety of ways. Following eight federally declared emergency declarations during the decade of 1980-1990, the Geological Survey provided direct assistance to State and local governments on landslide problems ranging from emergency hazard assessments to design of landslide mitigation schemes. For example, the Geological Survey is currently advising the County of Santa Cruz, California, on hazard assessment studies and mitigative measures regarding large landslides in the epicentral area from the October 17, 1989, Loma Prieta earthquake. In addition to the published findings of the program, a computer data base of nationwide landslide information maintained by the Geological Survey Landslide Information Center is available to local governments.

I understand that Landslide Hazards Program contributes to the U.S. Global Change Program (page 91 of USGS's budget justification).

Question: How does the Landslide Hazards Program contribute to the Global Change Program?

Answer: The Landslide Hazards Program contributes scientifically by addressing some of the research questions that pertain to both landslides and the Global Change Program. Studies of landslide recurrence and slope evolution examine the short- and long-term effects of climate on landslide activity and distribution and the role of landsliding as a geomorphic agent on long-term landscape evolution. In Colorado and Utah, dating of landslide deposits by examination of tree rings or by radiocarbon analyses of sediment in landslide dammed lakes will provide detailed information on prehistoric wet climatic cycles responsible for triggering landslide movement and will provide information for reconstructing local paleoclimates.

Coal Availability Studies - Central Appalachian Region

Last year, this committee added $1,056,000 to your budget to continue coal availability studies in the Central Appalachian region of Virginia, Kentucky, and West Virginia. Your FY 1991 budget proposes deleting the $1,056,000 and reducing the number of studies from 3 to 1. The justification for the decrease on page 188 gives no indication of why you arrived at this decision. It states only that "acquisition and analysis of data for updated assessments of the Nation's coal resources will be curtailed."

Question: I understand nine coal availability studies have been completed for this region. Are the studies improving understanding of the coal resources of the Central Appalachian region and of the Nation as a whole?

Answer: The nine coal availability studies that have been completed for the Central Appalachian Region are contributing to what we are certain will be a substantial improvement in the understanding of the characteristics and availability for development of the coal resources in this region. For example, results from the nine areas studied to date indicate that only about 53% of the remaining shallow resources are available for development, before recovery factors are considered. Previously, it had been assumed that a much larger percentage could be recovered. Another finding is that of the several constraints to availability, technologic restrictions to coal development result in the largest loss (32%). The Bureau of Mines is currently studying the factors that will determine coal recoverability for this region in cooperation with the U.S. Geological Survey so that together, the two bureaus will be able to predict the amount of coal that can actually be recovered from this region.

Each coal-bearing region and each State will have unique characteristics so that it would be imprudent to extrapolate the results of the studies in the Central Appalachian Region to other regions; however, the results from our work to date indicate that the availability of coal resources for development in the United States may have been highly over-estimated and that studies should be undertaken in additional regions to determine whether, in fact, this is true and what the availability of coal for development may actually be.

Question: I also understand approximately 20 studies need to be completed in order to have a representative number from the region. What would be the optimum funding level for FY 1991 and for subsequent years to complete these studies?

Answer: The level of funding would depend upon the desired completion date. Although statistical analyses of the data generated in the studies in Central Appalachia are still underway, we continue to estimate that a total of 20-21 quadrangle investigations will be required to adequately represent this region. At the FY 1990 level the region will be completed in 3 to 4 years. One study will be conducted in FY 1991 only if a state can be found with the funding available to support all of its own activities without USGS funding.

Ground-Water Supply Investigations for Searchlight, Nevada

As part of the FY 1990 Congressional actions, we directed the Geological Survey to "explore the possibility of assisting the town of Searchlight, Nevada, through the Federal/State Cooperative Program, in its effort to locate a water supply source for use by the local citizenry."

Question: What progress has been made in locating a water supply for Searchlight?

Answer: Extensive discussions have been had with the Las Vegas Valley Water District (LVVWD) regarding USGS involvement in their effort to locate a water supply for the town of Searchlight, Nevada. The LVVWD has selected two candidate sites for the installation of a new public supply well. The LVVWD and USGS have entered into a $100,000 joint funding agreement ($50,000 each) to accomplish hydrogeologic tests during the drilling process. The LVVWD is in search of additional financial support to actually drill the supply well and construct an associated treatment facility and pipeline to convey the water to the town of Searchlight. The

USGS is continuing to work with the LVVWD and the Bureau of Reclamation to provide appropriate assistance in assessing the potential of the candidate sites for new ground-water supplies of sufficient quantity and quality to satisfy the requirements of the community.

I understand the two candidate sites for well drilling need approvals from the Bureau of Land Management. The process is slow because BLM is considering the potential effect of activities at these sites on the Desert Tortoise which is designated as an endangered species.

Question: Could a joint funding agreement be signed with the Las Vegas Valley Water District to proceed with work which is outside of BLM's jurisdiction?

Answer: There are no potential well sites in the area which are not on BLM land. The two candidate sites have been selected by the LVVWD based on their review of available data, the conduct of geophysical surveys, and consideration of the logistics and cost associated with developing the site and transporting the water to the town via the construction of a pipeline.

West Virginia Water Data Program

Dr. Peck, the U.S. Geological Survey in cooperation with the U.S. Army Corps of Engineers and the U.S. Weather Service operates a water data network in West Virginia. The network includes 68 sites which are used for flood forecasting and warning. The 6 sites located in Tug Fork Basin are part of this network.

Question: What is the status of the water data network in West Virginia?

Answer: The USGS continues to operate a network of 68 streamflow stations used by the Corps of Engineers and the National Weather Service for flood forecasting and flood warning. One of the six sites in the Tug Fork basin has been severely damaged by vandals and is currently out of operation. However, it is the most downstream site and, therefore, is not critical to the forecast/warning operation in the Tug Fork Valley. Steps are being taken to relocate the station to a less vulnerable site.

The water data network in West Virginia is supported, in part, by funds supplied by other Federal Agencies (Corps of Engineers and the Soil Conservation Service). The USGS is advised that budgetary difficulties faced by these agencies could impact their ability to continue to fund their elements of the network in FY 1991. Discussions are underway for the purpose of exploring ways to minimize the loss of data, should these other Federal agencies find it necessary to withdraw funding support.

Question: Do you feel everything is in place and running in a manner that will provide adequate warnings in the event of flooding?

Answer: Those elements of the West Virginia data network utilized by the National Weather Service for flood forecasting purposes have been the focus of considerable attention and upgrading over the past decade. Although there are always opportunities for improvement, we believe that the network, as presently configured, is reasonable for the purpose of providing data for use in flood forecasting and flood warning. The present streamflow network in West Virginia is composed of gaging stations that have been established over the past 100 years to collect data for a wide range of purposes. As a consequence, there are undoubtedly some sites which are not optimally located for the singular purpose of flood forecasting. The USGS continually assesses the design of data collection networks to insure that they meet information requirements. Providing information for purposes of flood forecasting is of highest priority, and network modifications needed to serve this purpose receive special attention.

National Water Information Clearinghouse

This year's funding request for the National Water Information Clearinghouse is reduced by $2.4 million from last year's appropriated level of $3.4 million. On page 220 of your budget justification you state the objectives of the program are "to improve and expand the availability of water resources information to the rapidly expanding Federal and non-Federal user community; to facilitate better use of available resources for water information sharing and management at all levels of government; and to develop and maintain a national program to inventory, archive, and widely disseminate information about water resources, related research, and technology development." It seems to me that this program recognizes the need to communicate and share information.

Question: How is it that the funding for this program is only one-third of last year's funding level when it is an essential player in disseminating information to address our Nation's water quality problems?

Answer: Some clearinghouse functions will continue to be performed in the USGS. However, due to budget constraints, the funding allocated for these purposes must be reduced.

Question: What do you intend to do with the $1 million identified for this program?

Answer: The $1 million requested for FY 1991 will permit operation of the National Water Data Exchange Program (NAWDEX), and associated Water Data Sources Directory, and Master Water Data Index. These data bases are utilized by water resource professionals in Federal, State and local agencies and in the private sector.

Secretarial Initiatives

Dr. Peck, your FY 1991 General Administration budget request identifies an increase of $1.7 million in support of Secretarial initiatives. You are proposing $79,000 for Take Pride in America, $500,000 for Excellence in Education, $700,000 for Women and Minorities, and $400,000 for Volunteerism.

Question: How does the mission of the Geological Survey fit in with the Take Pride in America program?

Answer: The Take Pride in America program is a national public awareness campaign to encourage everyone to take pride in the Nation's natural and cultural resources. The mission of that campaign is to develop partnerships of public and private organizations committed to ensuring the wise use of the resources that belong to the Nation. By providing the basic natural resources and earth science information needed by policy and management officials, the USGS in its day-to-day work supports and encourages the basic mission and message of the Take Pride in America program.

Through our Volunteer for Science program, which is a companion program to the Take Pride in America effort, we are forming partnerships with private citizens to assist the USGS in accomplishing its mission and, at the same time, promote the basic message of Take Pride that good stewardship is everyone's responsibility.

Question: The Take Pride in America program has been in existence for several years. Many agencies have been active and visible in the program. Haven't you been supporting their activities in the past?

Answer: Yes, we have supported the Department's Take Pride in America program through contributions to the Departmental Working Capital Fund. However, the proposed increase in funding for the USGS would help us to pursue efforts toward protecting and saving our natural resources. Presently, the Survey is initiating a Waste Paper Recycling Program. Recycling our maps, computer paper, and high grade office paper will reduce landfill burden and lower our waste disposal costs.

Question: Why is it suddenly important to separate Take Pride in America from your other programs?

Answer: The Geological Survey has supported the Department's Take Pride in America program but is now proposing to increase the bureau activity. The establishment of additional programs in the USGS such as Waste Paper Recycling necessitate an increase in funding. In addition, funds would be used for recognition of employees and other volunteers who have donated hours of time toward the improvement of USGS trails and walkways, buildings, handicapped facilities, and beautification projects.

The $500,000 for Excellence in Education sounds like a worthy endeavor.

Question: Haven't you been involved with educational institutions in the past and provided counsel and advice to educational institutions on such things as improving curricula and enhancing knowledge? (The budget justification cites numerous examples where the Survey is supporting and working with education institutions.)

Answer: The USGS has had an extensive commitment to education throughout its history. With over 200 field offices, the USGS has a significant amount of "grass roots" activity in earth science education. Formally organized programs and activities that are ongoing include work with the Historically Black Colleges and Universities, Minority Participation in the Earth Sciences, University Grants and Research Contracts, Graduate Interns, and Faculty Appointments. We also have USGS scientists on committees such as the American Geological Institute and National Science Teachers Advisory Education committees, providing advice and assisting in curricula improvement.

Question: Under this initiative, what would you be doing that is new?

Answer: There is widespread recognition and consensus within the scientific and educational communities, as well as the Administration and Congress, of the need to foster high educational standards and increase participation of women and minorities in earth science careers. This initiative would enable the USGS to increase the implementation of nationally oriented programs, thus impacting a much greater number of earth science educators. The establishment of the proposed "Earth Science Resource Centers" at our Reston, Denver, Flagstaff, and Menlo Park offices, for example, would provide teacher guides, classroom activities, special library collections for use by teachers, as well as focal points for teacher workshops to be held. We would also increase the number of teachers who serve as voluntary interns and the number of cooperative programs. Currently there is more demand for these internship positions on the part of teachers than we have funds to support.

Dr. Peck, you are isolating a $700,000 Women and Minorities program that should be an integral part of your regular program of work.

Question: Why aren't you at a point yet where your affirmative action program for minorities and women is institutionalized in your managers' personnel management activities?

Answer: Affirmative action is an integral part of our regular program of work and is institutionalized in our management. We believe that we have a good program now but can do more. The USGS has included the implementation of the affirmative action program for women and minorities as one of the elements in the performance standards of our managers for a number of years. We have reviewed the SES work plans to ensure the human resources element, which incorporated the implementation of the affirmative action program, is, in fact, a critical element.

Question: Why should this be a separately budgeted item?

Answer: The FY 1991 request to separately budget for this issue serves to highlight our increased focus on women and minorities and to identify a source of funds dedicated solely to these efforts. The program will include increased availability of upward mobility and training programs, as well as increased recruitment. This proposal intensifies the emphasis and visibility of our efforts in this area while continuing the focused funding in the Executive Direction subactivity consistent with management commitment and responsibilities.

Question: What are your plans to hire women and minorities at the middle and senior levels of your organization?

Answer: We plan to improve our efforts to hire women and minorities at the middle and senior levels through the use of increased training opportunities, which will make more women and minorities eligible for these positions and through recruitment efforts with minority colleges. We have recently developed a formal objective to be monitored in the regular MBO processes of both the USGS and the Office of the Assistant Secretary, Water and Science. This objective focuses on increasing the nominations of women and minority candidates for the SES training program, and ensuring that candidates from these groups are given full consideration for SES positions that become available.

Volunteerism is an excellent way to reap intangible as well as tangible benefits. Again, I question why this is not an integral part of your programs. If each program area spends a dollar, each manager should have more than a dollar returned.

Question: Doesn't the Geological Survey currently have an integrated volunteers program, and what are you presently doing in this regard?

Answer: Yes, the Geological Survey does have an integrated volunteers program. Since Fiscal Year 1986, 1,298 volunteers have participated in the volunteer program, contributing 295,145.50 hours or over 140 staff years of effort. Savings from volunteer service contributions are estimated at over $3,000,000. The volunteer program has enabled the Geological Survey to augment its paid workforce and program activities, despite curtailed budgets and reduced personnel resources. Our programs areas have supported volunteer program costs. The program has been extremely successful; however, it is precisely due to this success of the program that we are requesting funds which will permit us to enhance and expand volunteer program activities. Although the volunteer program is currently an integral part of our program areas, volunteer program expansion requires increased outreach to colleges and universities; attendance at volunteer and job fairs; participation in conferences; the development of promotional materials, along with other activities that will assist us in the recruitment, utilization, and retention of more volunteers.

The volunteer services performed represent nearly all Geological Survey occupations, including physical scientist and technicians, research scientists, geologists, computer assistants, library assistants, and clerical aides. Yet, the volunteer program benefits go far beyond the support of Survey projects and activities. The program provides high school and college students, teachers, senior citizens, women, and minorities, with the opportunity for hands on experience, direct contacts and working relationships with scientists, and access to new technology. Many student volunteers receive college credit for their participation in Geological Survey assignments and projects.

As part of the budget justification explanation (page 295) for the Secretarial Initiatives which we have just been discussing, $150,000 of the expected expenditures are shown for personnel compensation and $844,000 are shown for other services.

Question: No FTEs are requested for the initiative. I understand the FTEs for this initiative are spread throughout your other programs. Why isn't the funding requested in the same areas where the FTEs are?

Answer: The FTE's that are required for some of the appointments, such as student appointments from Historically Black Colleges and Universities and the Minority Participation in Earth Sciences (MPES) program, are spread throughout our scientific programs. The funding is not requested in the same area the FTE's are, as the needs of the applicants themselves as well as program needs will vary in any given year. The personnel compensation and benefits funding requested represents an estimate of about 30 additional students above the 130 currently employed during a typical fiscal year. This represents approximately 7 FTE in total, since each student uses only a fraction of an FTE. Minority and disadvantaged students employed through the governmentwide "Stay in School" program are exempt from FTE targets. Volunteers are also exempt from FTE targets.

Question: Why is over half of the Secretarial Initiative planned to be spent in the "other services" category; by its very nature, why isn't the work on these initiatives being done in-house?

Answer: The management of these efforts will be accomplished within the USGS. However, major component of the proposal will be used to reach outside of the USGS in order to provide these educational, employment, and volunteer opportunities. Examples of such outward oriented activities being considered include cooperative research for women and minority earth scientists, distinguished minority earth scientist lecture series, earth science advisors for tribal colleges and schools, development of spanish language earth science educational materials, workshops for high school teachers, science curricula development in Historically Black Colleges and Universities, teacher resource centers, and exhibits and workshops at teacher association meetings. The volunteer program increase will be used for such items as incidental expenses for volunteers such as recognition awards and expanded development and dissemination of information on volunteer opportunities with the USGS. Many of these efforts require expenditures outside the USGS and are therefore, budgeted in the "other services" category.

Question: Would you provide for the record a crosscut which shows where funds for each of these initiatives would be used by specific program areas?

Answer: All aspects of this initiative have generated a broad range of proposed projects from the various program managers at all levels within the USGS. The proposals are currently being reviewed so that those finally selected will represent the most efficient use of the funds. A crosscut will be provided to the Committee when the selection process is final.

Legacy '99 Initiative

Secretary Lujan has included an initiative in the fiscal year 1991 request which is entitled Legacy '99. The initiative involves taking corrective action for unsafe dams, cleaning up hazardous materials, and increasing overall maintenance programs to improve the condition of facilities.

Question: Is the Geological Survey participating in the Secretary's initiative? If so, how are you participating? Is this a new undertaking?

Answer: The Assistant Secretary for Policy, Management, and Budget (PMB) has established an office to plan and coordinate Department of the Interior efforts to clean up the Department's hazardous waste sites. During FY 1989, the USGS had discussions with PMB concerning the Survey's scientific and technical expertise in this area. The USGS expects to help the land holding agencies and other Interior Bureaus address their hazardous waste problems in the future on a reimbursable basis.

Administrative Efficiency

Question: Page 22 of your budget justification describes the base adjustment for administrative efficiency. The Department is proposing to decrease spending for consultants, travel, overtime, supplies, and equipment by about 5 percent. The reductions to the base are itemized as follows:

Consultants -3
Travel -523
Overtime -156
Supplies -871
Equipment -915

Why are increases shown on your object class table (page 309) in travel, supplies, and equipment?

Answer: The increases are the aggregate of the object class details of all increases and decreases. They represent the net change from the base already reduced by the administrative efficiency reductions.

QUESTION SUBMITTED BY SENATOR J. BENNETT JOHNSTON

Question: The FY 1990 Interior Appropriations conference report directs the USGS to continue the existing site selection process for establishing priorities for the Side-Looking Airborne Radar (SLAR) program; however, if priority considerations permit, coverage of Louisiana, Mississippi, and Alabama and contiguous geologic features should be completed. Will your priorities for the current fiscal year permit a SLAR flyover of Louisiana and its contiguous geologic features?

Answer: Yes. Using our existing site selection procedures, the New Orleans project area was planned for acquisition using FY 1990 funding. This project area is comprised of five quadrangles in Louisiana and adjacent areas of Alabama, Mississippi, and Texas. Collection of SLAR data from these quadrangles will complete initial coverage of Louisiana.

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

Thematic and Special Data

You have proposed a reduction of $1.6 million (-35 percent) in the Thematic and Special Data program for fiscal year 1991. This cut will cause a 25 percent reduction in the number of orthophotoquads to be produced in FY 1991 (page 39).

Question: Was the orthophotoquad pilot project in Dane County, Wisconsin completed for the Soil Conservation Service (SCS) not successful?

Answer: The SCS and State of Wisconsin are very pleased with the results of the Dane County project as indicated by the additional 1:12,000-scale quarter-orthophotoquads requested by the SCS for several Indiana counties. The SCS and other agencies have additional requirements in other States such as Ohio, Maryland, Pennsylvania, Illinois, Georgia, and Nebraska where it is planned to use new orthophotography for updating older soil surveys. Another project with the U.S. Department of Agriculture, Forest Service, entails the production of 187 orthophotoquads under a work-share agreement.

Question: If not, why are you proposing to scale back this project? Are the users pleased with the results?

Answer: Orthophotoquads are an important tool used by many Federal and State agencies but due to fiscal constraints and competing program priorities, this program is recommended for a reduction of $1.6 million in FY 1991 with an output reduction of 79% from 1900 to 400 quadrangles.

Question: Have you explored performing this task on a reimbursable basis? Most of the users are government agencies.

Answer: USGS also benefits from projects such as these and performs them on a cooperative basis. Approximately 70% of all orthophotoquad production is funded by cost-share agreements, the share being 50-50 between the USGS and the cooperating agency. The other 30% are produced through work-share agreements in which no funds are exchanged, but work is actually performed by the cooperating agency freeing USGS personnel for other cost-share tasks.

Global Change Data Systems

You have requested a 137 percent increase in FY 1991 ($2,992,000 in FY 1990 versus $7,092,000 in FY 1991) for the Global Change Data Systems program. This program is designed to manage and facilitate access to global land data sets required to support global-change investigations (page 49).

Of this increase, $2.0 million is proposed to focus on the design and development of a system which will locate, catalog, and make available land data and information needed by the global change science community.

An additional $2.0 million is designed to initiate research to define, develop, and test surface characterizations to serve the needs of global processes and modeling studies.

This proposal seems to focus on the need to perform basic research and to collect necessary data in order to better understand global change.

Question: Do you feel that the accuracy of data used in many scientific analyses and computer models is questionable?

Answer: There are probably few large scientific data sets that are error free, but as a broad generalization, the accuracy of data is dependent upon the "state of the art" within a given scientific discipline. The quality and precision of instrument measurement capabilities improves over time, so older data sets may be viewed as less precise than data sets derived from more up-to-date technology. The ultimate test of scientific validity is reproduceability of results. If the scientific methods employed stand up to the scrutiny of the scientific community, and results can be reproduced with close agreement, then a strong case can be made for attaching a high degree of confidence to the results.

The output from computer models can be no better than the quality of the input data used. In the case of climate models such as the General Circulation Models (GCM's) that are currently being used to predict possible consequences of increases in "greenhouse gases" in the atmosphere, model output is dependent upon the validity of simplifying assumptions made to permit the model to approximate reality by means of mathematical equations. If the simplifying assumptions are inappropriate, then the resulting predictions from the model run will probably not be very useful approximations of reality. Some of the input to climate models is quite good, reflecting a good understanding of many aspects of atmospheric physics, for example. In other cases, important factors such as the role of clouds in influencing global climate are poorly understood at present, and therefore inadequately represented in most models. Other data sets are very inadequate, yet are very important for understanding the future impacts of climate change. Existing models are apparently poor at predicting the effects of climate change on soil moisture, for example. Changes in soil moisture have very important implications for future agricultural potential and land use. Yet present day soil moisture variability and regional patterns are very poorly understood. If we do not understand the modern-day relationships between climate and soil moisture conditions, and how they vary, then it will be extremely difficult to produce models that can predict the impact of possible future climate changes upon soil moisture on either a regional or global scale.

Question: What is the current time frame and cost to preserve and maintain the Landsat scenes acquired since 1972, as well as the time frame and costs for that system under the accelerated FY 91 budget?

Answer: Landsat data preservation activities require $0.6 million in FY 1990. If level outyear funding of $0.6 million were to be assumed, data preservation would be achieved for Landsat Thematic Mapper (TM) data by the year 2000 and for post-1978 Landsat Multispectral Scanner (MSS) data by the year 2005 with as much as 50% of the scenes lost due to deterioration. Pre-1978 Landsat MSS data would be irretrievably lost as a resource for documenting global change.

For FY 1991, $1.6 million has been requested for Landsat data preservation activities. If level outyear funding of $1.6 million were to be assumed, data preservation would be achieved for Landsat Thematic Mapper (TM) data by 1995 and for post-1978 Landsat Multispectral Scanner (MSS) data by 1998 with as much as 20% of the scenes lost due to deterioration. Pre-1978 Landsat MSS data would be irretrievably lost as a resource for documenting global change.

To achieve maximum preservation of post-1978 Landsat data, all should be converted to durable media by 1995.

Current Landsat data maintenance activities are recurring costs estimated to require $1.4 million in FY 1991.

Advanced Cartographic Systems

The objective of the Advanced Cartographic System program is to apply state-of-the-art technology in developing the next generation system capability and to implement these new systems in the Geological Survey mapping programs (page 60). The justification indicates that the program is strategically phased with the Defense Mapping Agency developments so that existing contracts with specific windows of opportunity can be utilized.

For Fiscal Year 1991, you have requested an increase of $14.5 million (+45 percent) above the Fiscal Year 1990 enacted level. The additional funds double the level of personnel and continue to develop and modify software as well as to purchase additional hardware.

Question: What do you mean by utilizing a "specific window of opportunity" with DMA?

Answer: The multi-year Advanced Cartographic Systems (ACS) program of the USGS is strategically phased with the Defense Mapping Agency (DMA) mapping modernization program so that existing DMA contracts with "specific windows of opportunity" can be utilized. Specifically, a "window of opportunity" refers to taking advantage of the DMA's mapping modernization manufacturing schedule for special purpose hardware. Due to the unique design of the DMA hardware and systems, there will be only one assembly line run over a specific period of time for these items. The USGS must remain in phase with the DMA procurement schedule or lose the opportunity to purchase this hardware. Being part of a much larger DMA procurement (both hardware and software), offers USGS a significant cost savings for the systems components.

During last year's hearing before the House Interior Appropriations Subcommittee, you indicated that while the reduction of manpower is not the intent of this program, it is being designed to significantly increase output of products at the manpower level of the present system.

Question: Where do you expect to take manpower reductions to accommodate this program? Can you explain what will be done in FY 91 with twice as many people?

Answer: Reduction of staffing is not the intent of ACS; it is being designed to significantly increase output of products above the present system to meet growing requirements, using the same level of staffing. In the near term, however, during this peak period of ACS systems development, a realignment of staff is needed to provide technical support and programmatic coordination with DMA. This increase in personnel is temporary and is expected to decline by FY 1995 when the system is fully operational.

A cost-effectiveness study was completed in 1986 and updated in 1989. This study shows that the program offers improved productivity by exploiting DOD technology as opposed to independent modernization through the open market.

Question: How was the study updated?

Answer: The original ACS analysis, where capitalization and production costs were examined, was reanalyzed and supplemented based on more current data from the DMA Modernization program and USGS production costs. In addition, a conventional component was incorporated enabling the USGS Modernization program to better meet National Mapping Program requirements.

Question: What did the updated version indicate was different from the original study?

Answer: The 1989 study shows that the capitalization costs for ACS are greater than had been estimated in the original study. The updated analysis also shows that ACS will still result in large cost savings compared to the use of conventional technology.

Earthquake Program

Although several thousand earthquakes occur annually in California, one of the largest occurred on October 17, 1989, in the San Francisco Bay region. This earthquake caused 62 deaths and nearly $6 billion in damage in the area and adjoining regions (page 79).

Question: What questions were identified from the earthquake in the Bay area as well as the earthquake in Soviet Armenia that still remain unanswered?

Answer: These two earthquakes demonstrated tragically the effects of a large earthquake occurring in proximity to an urban area. Several questions relate to the effects in populated areas resultant from earthquakes:

- One of the primary differences was the casualties, 62 in California versus 25,000 in Armenia caused by the collapse of so many buildings in Armenia; what is the status of our building codes and earthquake resistant construction in areas other than California?
- How will the shaking from large earthquakes differ in urban areas throughout the United States?
- How susceptible are various parts of our country to earthquake-induced landslides?
- How earthquake resistant are bridges and overpasses in various earthquake regions of the United States?
- How can we proceed more rapidly toward the ability to predict earthquakes? Were there phenomena that occurred before these earthquakes that could have given warning?

In addition, a variety of questions arise as a result of the new information obtained from these earthquakes, for example:

- Is the earthquake hazard in the bay area reduced, the same, or greater as a result of the 1989 earthquake?

Following the earthquake, Congress provided an additional $12 million to the Geological Survey. Of these funds, $8 million is for earthquake investigation, and $4 million is for activities leading to long term earthquake hazard reduction.

Question: Were any of these funds retained in your base budget? If so, for what will they be used?

Answer: No, this was a one-time special appropriation added to our FY 1990 budget, for a total of $46.0 million. The FY 1991 budget request is $35.027 million.

Question: Why are you requesting ten less full-time equivalents in FY 1991 than in FY 1990, and essentially level funding (474 in FY 1990 vs. 464 in FY 1991)?

Answer: Essentially level funding over the past several years coupled with absorption of increased fixed costs has required that we gradually reduce the number of FTE associated with the program.

One of the uses of the funds has been support of a Southern California Earthquake Center in cooperating with the State of California and academia (page 81).

Question: Please break down the amount of funds to be used for this purpose as well as the cost sharing provided by the State and academia.

Answer: The total amount of funding for the center has not yet been finalized. A proposal to the National Science Foundation from the academic community is pending in the amount of $5 million dollars. Discussions with the State of California are in progress but no firm figures have been agreed to. In addition, the USGS estimates approximately $1.5 million will be used for the Center from the Supplemental funds.

Volcano Hazards

A major explosive eruption of Mt. Redoubt volcano in early January of this year resulted in an ash plume rising 35,000 to 45,000 feet above the surface (page 88).

The justification states that current funding of $500,000 maintains a minimal seismic and tilt monitoring of Cook Inlet volcanoes, and supports a modest program of hazards mapping.

Question: What are the current hazards of Redoubt Volcano?

Answer: The current hazards of Redoubt Volcano are: (1) fine ash that can damage aircraft in Alaskan skies and a wide variety of mechanical and electronic objects in Alaskan communities; (2) floods and debris flows that can damage the Drift River oil facility; and (3) uncertainty about further hazard that causes costly disruption of economic activities in the Cook Inlet even without actual physical damage.

Question: Why are you only putting in a minimal effort?

Answer: Our response to the present crisis includes application of nearly every tool for eruption prediction with which we are familiar and which is appropriate and feasible in the Redoubt setting. Several experimental techniques for eruption prediction and ash detection are also being tested. This response is costly--already, we have spent more than twice the annual budget of the Alaska Volcano Observatory (AVO) on Redoubt alone--and our policy is to do whatever is needed to save life and property and to seek to recover those costs later through established procedures and sources.

An annual AVO budget of $500,000 cannot support more than minimal seismic and tilt monitoring of Cook Inlet volcanoes.

Question: What type of program and funding is necessary to put forth a good effort?

Answer: For the Cook Inlet, AVO would need to triple the number of seismometers, improve geodetic and gas monitoring on Augustine and begin instrumentation elsewhere. Major efforts are needed to improve the detection and tracking of volcanic ash and to assess the evolving hazard from debris flows. A program of Global Positioning System measurements and several other measures that would be important in longer-term forecasting and minimizing economic disruption should be started. The cost of a solid effort for the Cook Inlet, including monitoring, hazard assessment, and outreach to local communities, would be $4.0 million per year. This estimate does not include monitoring or hazard assessments for the roughly 45 potentially active volcanoes outside the Cook Inlet, any of which could impact international air routes through Alaska.

Landslide Hazards

The justification indicates that in fiscal year 1991 you are proposing to reduce the amount of landslide mapping and initiate studies in landslide recurrence and slope evolution.

Question: What are the regional assessments you are working on in FY 1990 and what are proposed for FY 1991?

Answer: In FY 1990 regional assessments of landslide hazards are underway in Honolulu County, Hawaii, in a part of the central Appalachian Mountains of Virginia and West Virginia, and in northern California as a result of the October 17, 1989, Loma Prieta earthquake. The assessment in the central Appalachian Mountains will be completed by the end of FY 1990. During FY 1991, the regional assessments will continue in northern California and in Hawaii, and will be expanded into southern California.

Question: What are the State susceptibility maps you are working on in FY 1990, and what are you proposing to work on in FY 1991?

Answer: In FY 1990 State susceptibility maps will be completed in Vermont, Utah, and New Mexico. Although no new State maps will be undertaken in FY 1991, efforts will continue to develop new improved statistical and probabilistic methods that can be applied to produce State susceptibility maps.

Question: What is the extent and significance of damaging landslides as a result of the 1989 earthquake?

Answer: The October 17, 1989, Loma Prieta earthquake triggered thousands of landslides throughout the Santa Cruz Mountains in northern California. Most of the residential structural damage from this earthquake in the Santa Cruz Mountains near the epicenter was caused by landsliding. Many landslides were very large in the epicentral area and caused significant structural damage and blocked many roads. The largest landslide, near the community of Laurel, encompasses more than 185 acres and contains within its borders several dozen houses, many of which have sustained substantial damage. Landslides also seriously disrupted transportation and lifeline systems, making emergency response and hazard assessment difficult during the hours and days following the earthquake. A large landslide blocked the northbound lanes of Highway 17 that links Santa Cruz and the surrounding coastal area with the San Francisco Bay region. This highway, which carried tens of thousands of commuters per day, was closed for more than 1 month for repairs.

Climate Change

You have requested a 219 percent increase in the Climate Change program for fiscal year 1991. This program responds directly to the President's initiative for the Federal Global Change Research Program which is currently underway (page 133).

The justification indicates that one of the major areas of focus is improved understanding of the causes, rates, frequency, and consequences of past global climate changes. With this improved understanding, it will be easier to evaluate the predictions derived from General Circulation Models (GCM's). Since there are numerous GCM's in use, there are also numerous results, and numerous possible outcomes of "greenhouse warming."

Question: Can you discuss some of the shortcomings of some of the computer models?

Answer: General Circulation Models (GCMs) use the most powerful computer systems currently available to approximate the behavior of Earth's atmosphere under a defined set of parameters and conditions. In order for even a state of the art super computer to make the vast multitude of complex calculations required to run the model, a number of simplifying assumptions must be made in the models. The hope is that these simplifying assumptions do not alter the behavior of the model in ways that would produce erroneous model results or predictions. There are many versions of GCM's currently in use by the various modeling groups in the U.S. and abroad. Each model has its individual set of defined parameters and simplifying assumptions that can effect the model output. Consequently the output from several models can be compared and sometimes can be shown to differ markedly in model results or predictions.

Models are constantly being upgraded, refined, and improved. In general, however, most models do not yet adequately factor in the role of clouds on global climate. Most models assume that the ocean is very shallow, and therefore ignore the role of deep water ocean circulation and its contribution to global heat transfer, an important factor in behavior of the global climate system. GCM's inadequately portray topographic effects that can dramatically influence the movement of air masses and distribution of precipitation. At present, the computer power available requires that models average out regional differences dramatically. This means that current models are able to represent global scale atmospheric behavior fairly well, but the models are currently very poor at portraying atmospheric behavior and climate changes at a regional scale. For the purposes of policymaking, regional scale predictions are much more important and useful than global scale predictions. Therefore much effort is being expended to develop future climate models that may ultimately have regional scale resolution. Improvements in computer technology will probably be required to permit significant enhancement of model resolution at the regional scale.

$1.0 million of this increase ($3.0 million in FY 1990 vs. $9.7 million in FY 1991) is to hire 20 full time equivalents. An additional $490,000 is for travel for those additional people.

Question: Can you explain why each new FTE in FY 1991 will need $24,000 to travel when each new FTE you requested in FY 90 received $6,700.

Answer: The USGS does not plan to allocate the requested FY 1991 travel funds using the formula suggested above (dividing the total requested amount by the number of new FTE requested). Allocation of the FY 1991 travel costs includes requirements of the additional FTE's, expanded requirements of current FTE's, helicopter contracts in Alaska, and participation in workshops and key national and international planning meetings on global change.

Question: Please provide for the record additional detail, by object class, on the proposed use of the $6.7 million.

Answer: The following provides a more detailed explanation of object class estimates for the FY 1991 budget increase request for the Climate Change Program of the Geologic Division of the USGS. These are estimates made in advance of known actual inflation rates, pay raises, and contract bids, and are therefore subject to future adjustments between object classes.

Personnel Compensation:
20 FTE (new) x ca. $ 50 K/FTE salary = $1,000,000

Personnel Benefits:
20 FTE (new) x ca. 10% of salaries = $100,000

Travel and Transportation of persons = $490,000
(see explanation above for previous question)

Transportation of Things = $150,000
(Includes such items as air freight, air charters to transport drilling equipment, and overland shipment of field equipment)

Communications, Utilities, and Misc. Charges = $350,000
(Includes space charges for laboratories, offices, and warehouses and the costs of telephones and utilities)

Printing and Reproduction = $160,000
(Includes costs for publications, reprints of scientific articles resulting from research funded by Climate Change Program, and special publications resulting from USGS Climate Change Program Workshops)

Other Services = $1,700,000
(Includes costs for photographic services, equipment maintenance contracts, computer programming, isotopic analyses, radiocarbon dating services, contract research with university scientists, machine shop, and electronics services)

Supplies and Materials = $750,000
(Includes costs for laboratory expendable supplies (e.g. glassware), laboratory chemicals, drilling supplies, electronics materials, office supplies, shipping supplies, film)

Equipment = $2,000,000
(Includes costs for upgrade of USGS drilling and analytical equipment for sediment and ice coring, electronic equipment for permafrost temperature monitoring and mapping, computers and software for Climate Change/Global Change Data Management, microscopes, and laboratory equipment (centrifuges, safety equipment, minor laboratory instruments))

Total (all categories) = $ 6,700,000

Funds were provided in FY 90 to increase the number of FTE's in the Climate Change Program from 17 to 32.

Question: How are you proceeding with that increase?

Answer: The Climate Change Program is fully staffed at the 32 FTE level during FY 1990.

Coastal and Wetlands Processes

Coastal Louisiana contains approximately 40 percent of the nation's coastal wetlands. These wetlands support a harvest of seafood and other resources with an estimated value of $1.0 billion per year. (page 135).

The erosion of wetlands has accelerated and increased to 50 square miles per year, about the size of Washington, D.C. The wetland loss is caused naturally by storm, or is man made through land use changes or sediment reduction.

The Geological Survey is in the last year of a planned 5 year study. The FY 1990 portion of the study will emphasize completion of the analysis and interpretation of the geologic and oceanographic data collected.

Question: What is the next necessary step in this analysis?

Answer: The final analysis and interpretations of the geologic and oceanographic field data collected in the barrier island erosion study are being completed and a series of final reports and atlas publications are being prepared. These technical results will be available at the end of the study and will be transmitted to State and Federal agencies (e.g., Corps of Engineers, Environmental Protection Agency, Minerals Management Service) needing the information.

Question: Will all of the Louisiana studies be completed in FY 1990 or just the studies of the barrier islands?

Answer: FY 1990 is the final year of the Louisiana Barrier Erosion Study, whereas the Louisiana Wetlands Loss Study is in the second year of a planned 5-year effort. That study, being done in cooperation with the Fish and Wildlife Service and in close coordination with the Corps of Engineers and Environmental Protection Agency, is providing sound scientific information about the physical processes that are critical to protecting and maintaining coastal wetlands.

Question: What are you proposing for Louisiana in FY 1991?

Answer: By the end of FY 1991, we will have completed the third year of the Louisiana Wetlands Study. We will have completed data collection on several of the critical physical processes that were originally planned for study in the Terrebonne Basin wetlands, a prime example of a sediment-starved and badly deteriorated wetland. The proposed activity for Louisiana in FY 1991 is to begin process oriented experiments and measurements in the Atchafalaya Basin, a sediment-rich and healthy wetland, in response to the President's "No net loss of wetlands" policy.

In 1987, the Geological Survey carried out a reconnaissance survey of Lake Michigan offshore of Chicago. A side scan sonar device was particularly effective in assessing the condition of engineering structures along the Chicago shoreline.

Question: How have you utilized what was learned from the sidescan sonar device?

Answer: The sidescan sonar records collected along the Chicago shoreline were interpreted and used to assess the condition and degree of deterioration of shore-defense structures (e.g., seawalls, shore revetments) that protect the city from direct wave attack and storm flooding from Lake Michigan. The findings, summarized in the report titled "Preliminary Sidescan Sonar Investigation of Shore-Defense Structures Along Chicago's Northside Lake Front: Wilson Avenue Groin to Ohio Street Beach," is being used by the city and State engineers to plan and design the rehabilitation of the Chicago shoreline. In particular, major renovations are underway for the old Navy Pier, and the sidescan data are providing vital information for design and rehabilitation of the pier.

Question: What type of followup research do you feel is necessary in FY 1991 and beyond? How will the Great Lakes region be redirected in FY 1991 (page 139)?

Answer: By the end of this year, the study element dealing with deciphering the geologic framework of South Lake Michigan along the Illinois and Indiana shore will be nearly complete. Field investigations, however, for measuring nearshore fluctuations in the recent geologic past will not have been done. Part of the wetlands budget in FY 1991 will support studies of wetlands around Lake Michigan but none of that work is at the shoreline.

National Mineral Resource Assessment

Question: Can you explain the difference between object class breakdowns for the reduction in the National Mineral Resource Assessment on page 164 of the FY 1991 budget and the one on page 171 of the FY 1990 budget? If I understand the displays correctly, they propose that the FY 1990 reduction is made up of the elimination of the RARE II studies ($1,500,000) and the absorption of fixed costs ($205,000). The FY 1991 reduction is made up of only the elimination of the RARE II studies ($1,500,000). I assume that the FTE reduction taken in FY 1990 relates to the cost absorption. Yet Communications shifts from a level of $100,000 in the FY 1990 budget to a level of $400,000 in the FY 1991 budget.

Answer: Your understanding of the difference between the FY 1990 and FY 1991 reductions is correct. That is, the FY 1990 reduction consists of the elimination of the RARE II studies ($1,500,000) and the absorption of fixed costs ($205,000). The FY 1991 reduction includes only the elimination of the RARE II studies ($1,500,000). The FTE reduction in FY 1990 does result from the absorption of fixed costs. Finally, your question states that estimated costs for communications, utilities, and miscellaneous charges had risen from $100,000 in FY 1990 to $400,000 in FY 1991. A rereading of these two object class breakdowns shows that costs for these items actually declined from $400,000 in FY 1990 to $100,000 in FY 1991. However, the estimate for FY 1990 has now been revised to reflect the level that communications, utilities, and miscellaneous charges are estimated to be obligated in FY 1990.

Exclusive Economic Zone

The Geological Survey is in the process of surveying the Exclusive Economic Zone. To date, 1.5 million nautical miles of sea floor have been mapped since FY 1984.

The budget indicates that the Geological Survey has decided that extreme sea conditions being encountered by ongoing surveys in the Hawaiian chain warrant postponing completion of this area until the summer of FY 1992, and plans are to begin EEZ surveys on American Flag Islands in the Central and Western Pacific in FY 1991.

Question: Why do you feel sea conditions in FY 1992 will be improved?

Answer: The rescheduling of the American Flag Islands in FY 1991 means that the summer of FY 1992 is the earliest feasible time to continue the northern Hawaiian Chain survey. Sea conditions are relatively calm year round in the Central and Western Pacific. The survey of the northern Hawaiian Chain will be done during summer months of FY 1992 when weather and sea conditions in that area are typically most favorable.

Question: How much is left to complete?

Answer: One field season of work. Approximately 100 sea days will be required to complete the remaining 25% of the Hawaiian chain.

Evolution of Sedimentary Basins

The 1988 National Research Council report of the Committee advisory to the Geological Survey concluded that an expanded Evolution of Sedimentary Basins programs "should become the core of the Geological Survey energy research program."

In response to that report, the Survey has requested an additional $1,250,000 (+23 percent) in fiscal year 1991. These funds will be used to address some of the shortcomings mentioned in the 1988 report. In addition, it will help the Department of Energy meet their Presidential directive to develop a National Energy Strategy.

Question: Did you agree with all of the recommendations in the National Research Council report?

Answer: While we are not in total agreement with all of the recommendations of the report in terms of manner of implementation, relative importance, and timing, we are none-the-less in agreement with the general direction and the need to restructure energy programs, as recommended.

Question: Are you addressing all of the recommendations of the National Research Council in this budget? If not why?

Answer: The U.S. Geological Survey is in the process of realigning its energy programs. As part of this effort most if not all of the committee recommendations as summarized in the report (page. 5-7) have been taken into consideration and acted on in a positive manner.

Question: What do we know about the Eastern Great Basin and what would you like to learn in FY 1991?

Answer: The Eastern Great Basin Province (southern Idaho, northeastern Nevada, and northwestern Utah) has been selected as one of the new 5-year basin studies to begin in FY 1990 as part of the USGS Evolution of Sedimentary Basins Program (ESB). The Great Basin stands out as one of the most enigmatic of the United States sedimentary provinces and defies attempts to fit the province into a specific basin type. In many respects, the Great Basin can be compared with the Arabian-Iranian Middle East basin, the world's most prolific petroleum region. Yet, thus far the Great Basin has had only meager hydrocarbon production, although it is currently receiving major attention by independent and major oil companies. Future interest appears assured because a large part of the province is only lightly explored. An important reason for expansion of the U.S. Geological Survey's Evolution of Sedimentary Basin efforts in this region is that 85-90% of the lands are Federal, and the Bureau of Land Management is offering special incentives to encourage exploration. Studies incorporating geological (stratigraphy, sedimentology, structure, paleo-structure), geophysical, hydrologic, hydrothermal, geochemical, heat flow, and other scientific approaches are of great potential usefulness as basic research projects as well as of inherent value to economic interests in petroleum and minerals.

In FY 1991, the USGS will conduct structural and stratigraphic framework investigations in order to establish the timing of the main tectonic events. Of primary importance will be to establish seismic and nonseismic geophysical data bases. Other activities to begin in FY 1991 will be investigations of the thermal and fluid-pressure history; the hydrocarbons and hydrocarbon source- and reservoir-rocks; and diagenesis and rock-water interactions in the basin.

One of the initiatives that has been undertaken in the Department of Energy is an analysis of our hydropower resources. One of the goals of the DOE is to promote full utilization of all hydropower resources by reducing the regulatory restraints and developing accurate assessments of the remaining resource potential.

Question: Does the Geological Survey have an accurate assessment of the hydropower resource potential?

Answer: The USGS does not maintain or develop information on the potential of sites for hydropower development. However, at the request of the Federal Energy Regulatory Commission (FERC) the USGS is involved in monitoring the effects of hydropower development on streamflow quantity and, in some cases, streamflow quality. The information collected is used by the FERC and the power companies to insure that legal and instream requirements are met and that aquatic life is protected. Licencees are required to fund the monitoring. The latest information on hydropower resource potential of which we are aware is the U.S. Bureau of Reclamation's 1980 Assessment of Small Hydropower Development.

Question: If so, why doesn't the DOE agree with it?

Answer: As stated above, the USGS does not maintain or develop information on hydropower resource potential.

Question: What do you see as some of the regulatory constraints in hydropower which can be reduced?

Answer: We have no basis upon which to comment on the regulatory constraints impacting hydropower.

Oil and Gas Investigations

You have proposed an $802,000 (-14 percent) decrease in the Oil and Gas Investigations program for fiscal year 1991. This decrease will suspend five research projects that were designed to address areas of petroleum generation, migration, and entrapment and to define and understand subtle oil and gas traps (page 191). In addition, the decrease reflects one less hydrocarbon potential study used for assessments of the nation's petroleum resources.

Question: Why aren't there any FTEs associated with this proposed decrease? Were all six studies done on a contract basis?

Answer: The research was conducted by USGS employees within existing staffing levels. These personnel will be reassigned to other projects in FY 1991 within the Oil and Gas Program.

Question: Even with a proposed reduction in FY 1990 of $802,000, the planned workload in the fiscal year 1990 budget stated that the Survey would proceed with one offshore oil and gas resource appraisal study and one onshore oil and gas appraisal study. The FY 1991 budget, however, indicates that the FY 1990 workload shifted and, while two onshore oil and gas assessments were performed, no offshore assessments were performed. Why the shift?

Answer: The offshore oil and gas resource appraisal study shown in the planned workload tables in the FY 1989 and FY 1990 budget justification referred to the study of oil and gas resources in State offshore waters conducted as part of a national assessment of oil and gas resources. This title was dropped in the FY 1991 budget justification in order to avoid confusion of this study with the much larger offshore assessment of oil and gas resources that was conducted by the Minerals Management Service. The national assessment as shown in the FY 1991 budget was completed in FY 1989.

Question: The FY 1991 budget indicates the Survey completed a "national assessment study" in FY 1989 (page 191). The FY 1990 budget, however, does not even indicate the Survey was working on a national assessment. Why?

Answer: The National Assessment is reported as an accomplishment on page GS-194 of the 1990 budget. It is also shown broken into its aggregate parts of onshore and offshore in the planned workload table.

Question: If the national assessment study is the offshore assessment, why does the FY 1990 budget indicate funding is necessary through FY 1990 and the FY 1991 budget indicate it was completed in FY 1989?

Answer: The two onshore assessments in FY 1990 and FY 1991 refer to assessments of the petroleum resources of Federal lands and the Eastern Basin and Range Province that will provide data for the next national assessment.

Question: Please provide the Committee with a copy of the National assessment.

Answer: A copy as you requested is attached.

Estimates of Undiscovered Conventional Oil and Gas Resources in the United States—A Part of the Nation's Energy Endowment

U.S. GEOLOGICAL SURVEY

R.F. Mast, G.L. Dolton, R.A. Crovelli, D.H. Root, and E.D. Attanasi

MINERALS MANAGEMENT SERVICE

P.E. Martin, L.W. Cooke, G.B. Carpenter, W.C. Pecora, and M.B. Rose

A joint assessment of the undiscovered
conventionally recoverable oil and natural
gas resources of the United States

DEPARTMENT OF THE INTERIOR
MANUEL LUJAN, JR., Secretary

U.S. GEOLOGICAL SURVEY
Dallas L. Peck, Director

MINERALS MANAGEMENT SERVICE
Barry A. Williamson, Director

Any use of trade, product, or firm names in this publication is for descriptive
purposes only and does not imply endorsement by the U.S. Government

UNITED STATES GOVERNMENT PRINTING OFFICE: 1989

Free on application to the Books and Open-File Reports Section,
U.S. Geological Survey, Federal Center,
Box 25425, Denver, CO 80225

Library of Congress Cataloging in Publication Data

Estimates of undiscovered conventional oil and gas resources in the United
States—A part of the Nation's energy endowment.
At head of title: United States Department of the Interior, Geological Survey
[and] Minerals Management Service.
Bibliography: p.
1. Petroleum—United States—Reserves. I. Mast, Richard F. (Richard
Frederick), 1931- . II. Geological Survey (U.S.) III. United States.
Minerals Management Service.
TN872.A5E84 1989 553.2'8'0973 89-600108

FOREWORD

Two Agencies of the U.S. Department of the Interior, the U.S. Geological Survey (USGS) and the Minerals Management Service (MMS), recently completed this assessment of the undiscovered conventionally recoverable oil and natural gas resources of the United States.[1] It considers new geological, technological, and economic information and uses more definitive methods of resource appraisal than previous assessments. The assessment was conducted over a period of more than 2 years and reflects data and information available as of January 1, 1987.

Because oil and gas are so important to the U.S. economy, there is substantial interest in the resource base from which future oil and gas production will come. Many readers of this report will have a strong interest in determining how much oil and gas is likely to be produced in the next several years from resources yet to be discovered. Important issues of public policy and private investment hinge on expectations about the extent to which the United States will be able to meet its energy demands from domestic resources during the next two or three decades.

Geologists and managers who want to assess the relative potential for future discoveries in various parts of the country will find this report helpful because the regional estimates were developed by using common methods and assumptions. Although the estimates in this report are good indicators of the relative oil and gas potential of various parts of the United States outside of known fields, they provide only limited information about future oil and gas production. The reasons for this limitation will become apparent as the scope, methods, and assumptions of the assessment are presented.

Scope of the Assessment

This assessment covers only a comparatively small portion of all the oil and gas resources believed to exist in the United States. Known domestic fields contain *reserves*—resources that are economic to produce by conventional methods at current prices and costs—of about 30 billion barrels of oil (BBO) and 206 trillion cubic feet (TCF) of gas. This report provides estimates of *undiscovered conventionally recoverable* oil and gas resources located *outside of known oil and gas fields*. In this assessment, *known* means confirmed by exploratory drilling; *conventionally recoverable* means producible by natural pressure, pumping, or injection of water or gas. Estimates are presented in two categories:

- *undiscovered recoverable resources*—accumulations of sufficient size and quality that could be produced with conventional recovery technologies without regard to commercial economic viability.
- *undiscovered economically recoverable resources*—that part of the undiscovered recoverable resource that is economically recoverable (that is, commercially profitable) by current conventional technologies and with specified economic assumptions.

This assessment covers only one of several categories of domestic oil and gas resources. Other resources—involving substantial amounts of recoverable or potentially recoverable oil and gas—are *not* included in this assessment and include:

- oil and gas yet to be recovered from known oil and gas fields by either conventional or enhanced oil recovery (EOR) methods.
- oil and gas yet to be recovered by EOR from undiscovered conventional resources, even though the enhanced recovery is done by conventional technologies and may be economic.
- resources in so-called *unconventional* sources of oil and gas, including tar deposits, intractable heavy oil deposits, oil shales, gas in low-permeability "tight" reservoirs, coalbed methane, gas in geopressurized shales and brines, natural gas hydrates (clathrates), and oil and gas synthesized from organic sources, such as coal.

Unconventional oil and gas resources have not yet made a major contribution to production and present rather specialized issues for geologists searching for additional oil and gas fields. However, technological advances and changing economic conditions may make them important sources of oil and gas production in future decades.

Methodologies Used in This Assessment

The methodologies employed are based on a probabilistic, geologic play-oriented approach, although some variances were used when data, information, or other factors precluded strict adherence to that approach. A geologic play is a group of geologically related prospects having similar hydrocarbon sources, reservoirs, and traps. Geologic play analysis requires either the estimation of the number and sizes of potential fields in an exploration play or the summation of individual prospect assessments in the play, depending upon the quantity of data available. Previous USGS assessments employed a *volumetric* approach to resource estimation. The methodologies employed by the USGS and MMS in this assessment are more advanced and data intensive.

The computational methods incorporate a systematic treatment of the probabilities that the events necessary to create and trap hydrocarbons have occurred in each play. There is no way short of exploratory drilling to replace such probabilities with certainty. In recognition of the uncertainties associated with estimating undiscovered accumulations of oil and natural gas, the estimates are presented as a range of possible occurrences: a *low* case having a 95-percent probability of that amount or more occurring, a *high* case having a 5-percent probability of that amount or more occurring, and a *mean* case representing the arithmetic average of all possible outcomes.

Several professional organizations conducted rigorous peer reviews of the data, methodologies, and assumptions used in this assessment. The Association of American State Geologists (AASG), at the request of our Agencies, examined the adequacy of the geologic information used in developing the assessment. A national meeting and several regional meetings were held with representatives of Federal and State Agencies, industry, and academia to review the data. The American Petroleum Institute and the Energy Information Administration (U.S. Department of Energy) attended the AASG meetings and concurrently conducted independent reviews. We have reviewed the comments and recommendations of these groups, and we are confident that the methodologies and data employed in this assessment are geologically and technically sound and the estimates reasonable.[2] We also have requested the National Academy of Sciences (NAS) to examine the methodologies and to review our entire oil and gas resource assessment process. A final report of the NAS review is scheduled for mid-1990.

---

[1] This assessment updates earlier USGS estimates for the total United States reported in 1981 in Circular 860, *Estimates of Undiscovered Recoverable Conventional Resources of Oil and Gas in the United States*, and MMS estimates for the Federal Outer Continental Shelf reported in 1985 in OCS Report MMS 85-0012, *Estimates of Undiscovered Economically Recoverable Oil and Gas Resources for the Outer Continental Shelf as of July 1984*.

A Department of Energy report on the natural gas resource base of the United States[3] compared assessments made by USGS/MMS and the Potential Gas Committee by considering geologically comparable estimates for specific regions. When assessments of similar resource categories were compared, the estimates of the Department of the Interior and the Potential Gas Committee were very close.

Key Economic Assumptions

Although this study is primarily a geological study, certain economic assumptions were made to facilitate the assessment. Estimates of undiscovered *economically recoverable* resources were based on the assumption that exploratory drilling of each play or prospect had been completed and that the decision whether the resulting discovery was economically recoverable was made on January 1, 1987. This decision was assumed to be based on development and production costs and oil and gas price expectations as of that date.

The assessment also produced estimates based on the assumption that conventional recovery would take place wherever technologically possible even if the resulting oil and gas production would not be commercially profitable. These estimates are called *recoverable* resources as compared to *economically recoverable* resources. Estimates of recoverable resources show the greater amounts of oil and gas that may be found and produced as technological advances reduce the costs of conventional recovery or as higher oil and gas prices make recovery of higher cost resources profitable.

Readers interested primarily in future oil and gas production should be aware of the limitations created by these economic assumptions. The timing of production from future discoveries depends upon:

- the existence of hydrocarbons in the new areas.
- the timing of the discoveries themselves.
- the technological and economic conditions in the years following discovery when decisions to invest in their development are made.

Moreover, the rate of production from each new discovery depends upon the amount of the resource and the characteristics of the reservoir. The estimates presented in this report are not intended to show either the timing of discovery or the rate of production that could occur. Furthermore, there is little relationship between the level of production from current U.S. reserves and the rate at which the remaining undiscovered resources will be produced.

Estimates of Undiscovered Conventional Oil and Gas Resources—January 1, 1987

Undiscovered *recoverable* conventional resources of oil in the United States, as of January 1, 1987, are estimated to range from about 33 to 70 BBO, with a mean estimate of 49 billion barrels (BB). Estimates of the gas resource range from about 307 to 507 TCF, with a mean estimate of 399 TCF (table 1).

Estimates of undiscovered *economically recoverable* oil and gas resources for the United States, as of January 1, 1987, are estimated to range from about 21 to 54 BBO and from 208 to 326 TCF of gas. The estimated mean value for oil is about 35 billion barrels and for gas about 263 TCF.

Table 1. Estimated mean value and range of probable values for each commodity category

Commodity	Mean Estimate	*(Range)*
Undiscovered recoverable conventional resources		
Oil	49.4 BB	*(33.2-69.9)*
Gas	399.1 TCF	*(306.8-507.2)*
Natural gas liquids	8.6 BB	*(6.1-11.5)*
Undiscovered economically recoverable conventional resources		
Oil	34.8 BB	*(20.7-53.8)*
Gas	262.7 TCF	*(208.2-325.5)*
Natural gas liquids	6.3 BB	*(4.6-8.4)*

These estimates of undiscovered conventional oil and gas resources are significantly lower than those published in earlier assessments (table 2). Much of the overall decline in estimated oil and gas resources results from massive exploration efforts by industry from 1980 to 1986. This drilling produced new discoveries of about 7 BBO and 65 TCF of gas, which directly reduced the amount of oil and gas remaining in the undiscovered category. More significantly, expected major discoveries in the frontier exploration areas of Alaska and the Atlantic OCS and in the overthrust belt of the Western United States were not forthcoming. These results have made geologists less optimistic about the oil and gas potential in those and other domestic areas than they were in 1981. The estimates of *economically recoverable* oil and gas resources were substantially lessened by the relatively low price assumptions that were used. Changes in the estimates also arise from the different assumptions, methods, and data that were used in the two studies.

Table 2. Comparison of earlier resource estimates with the current assessment

			USGS/MMS 1988	
			Recoverable	
	USGS 1975	USGS 1981	Tech.	Econ.
Oil (BB)	82	83	49	35
Gas (TCF)	484	594	399	263
NGL (BB)	16	18	9	6

Dallas L. Peck

Dallas L. Peck
Director
U.S. Geological Survey

Barry Williamson

Barry A. Williamson
Director
Minerals Management Service

---

[2] Examination or review by these organizations should not necessarily be interpreted as agreement with the results.

[3] *An Assessment of the Natural Gas Resource Base of the United States*, U.S. Department of Energy, DOE/W/31109-H1, May 1989.

Estimates of Undiscovered Conventional Oil and Gas Resources in the United States—A Part of the Nation's Energy Endowment

U.S. GEOLOGICAL SURVEY

R.F. Mast, G.L. Dolton, R.A. Crovelli, D.H. Root, *and* E.D. Attanasi

MINERALS MANAGEMENT SERVICE

P.E. Martin, L.W. Cooke, G.B. Carpenter, W.C. Pecora, *and* M.B. Rose

SUMMARY

In 1987, the U.S. Geological Survey and the Minerals Management Service completed a new assessment of the *undiscovered* conventional resources of crude oil and natural gas in the United States. This assessment responded to a national need for such estimates, considered new geological, technologic, and economic information, and used more definitive methods of resource appraisal than previous assessments.

The conventional resources assessed were (1) those considered *recoverable* under current technology and (2) those that could be developed and produced *economically* under specified price and cost relationships, excluding exploration costs. This study did not include resources from tar deposits, intractable heavy oil deposits, oil shales, gas in low-permeability (less than 0.1 millidarcy in situ) "tight" reservoirs, coal bed methane, gas in geopressured shales and brines, and natural gas hydrates (clathrates).

For this study, the United States was divided into 13 regions (9 onshore and 4 offshore), including the Exclusive Economic Zone (EEZ). The 13 regions were further divided into 115 provinces (appendix A, figs. A1 and A2). The resource estimates were based fundamentally upon review and analysis of petroleum geology and the exploration history of oil and gas plays in these provinces. Probability procedures were used in their derivation. Because of the uncertainty in estimating undiscovered resources, the estimated quantities are reported as a range of values that correspond to different probability levels.

The undiscovered *recoverable* conventional resources of oil for the United States, as of January, 1, 1987, are estimated to range from 33 to 70 billion barrels, with a mean estimate of 49 billion barrels; the estimates of gas range from 307 to 507 trillion cubic feet, with a mean estimate of 399 trillion cubic feet (table 1). Range estimates correspond to 95-percent probability (19 in 20 chance) and 5-percent probability (1 in 20 chance) of there being *more than* those amounts, respectively. Corresponding estimates for natural gas liquids (NGL) range from 6 to 12 billion barrels, with a mean estimate of 9 billion barrels.

Further, the assessed undiscovered *economically recoverable* oil and gas resources for the United States, as of January 1, 1987, are estimated to range from 21 to 54 billion barrels of oil and 208 to 326 trillion cubic feet of gas, corresponding to the 95-percent and 5-percent probabilities of there being more than these amounts, respectively (table 1). The mean value for oil is 35 billion barrels and for gas is 263 trillion cubic feet. Corresponding estimates for NGL range from 5 to 8 billion barrels, with a mean of 6 billion barrels. Distribution of these resources by region is shown in figure 1.

INTRODUCTION

In 1981, the U.S. Geological Survey (USGS) published the results of a national assessment of undiscovered oil and natural gas resources for the United States, including the Outer Continental Shelf (OCS) (Dolton and others, 1981). In 1982, the Minerals Management Service (MMS) was formed for resource management of the OCS, and in 1985 MMS published estimates of undiscovered oil and natural gas resources for the Federal offshore areas (Cooke, 1985).

The two Agencies in 1985 agreed to undertake a cooperative resource assessment of the total United States to determine estimates of undiscovered conventional oil and natural gas. This report provides estimates for the onshore and offshore geologic provinces of the Nation and summarizes the data sources, assumptions, and methodologies that were used in the development of these estimates. The data, assumptions, and methodologies differ from those used in

---

Manuscript approved for publication March 6, 1989.

Table 1. Estimates of undiscovered recoverable and undiscovered economically recoverable conventional petroleum resources for the United States

[Mean value totals may not be equal to the sums of the component means given elsewhere because numbers have been independently rounded. Fractile values (F_{95}, F_5) are not additive. Gas includes both nonassociated and associated-dissolved gas. BB, billion barrels; TCF, trillion cubic feet; NGL, natural gas liquids. F_{95} represents a 19 in 20 chance and F_5 represents a 1 in 20 chance of the occurrence of at least the amount tabulated]

	Oil (BB)			Gas (TCF)			NGL (BB)		
	F_{95}	Mean	F_5	F_{95}	Mean	F_5	F_{95}	Mean	F_5
Undiscovered recoverable petroleum resources									
Onshore	18.0	30.7	47.8	170.9	242.6	330.7	4.7	6.4	8.5
Offshore (Fed. and State)	9.4	18.8	32.5	101.1	156.6	228.1	0.8	2.2	4.7
Entire United States	33.2	49.4	69.9	306.8	399.1	507.2	6.1	8.6	11.5
Undiscovered economically recoverable petroleum resources									
Onshore	13.9	24.6	39.2	142.0	182.2	228.9	3.9	5.3	6.9
Offshore (Fed. and State)	4.3	10.2	19.6	47.6	80.6	125.1	0.3	1.0	2.3
Entire United States	20.7	34.8	53.8	208.2	262.7	325.5	4.6	6.3	8.4

previous assessments and are described in detail in a joint USGS-MMS working paper, U.S. Geological Survey Open-File Report 88-373. This report summarizes the working paper and, in addition, contains total estimates of the Nation's conventional undiscovered oil and gas resources.

This publication presents estimates of undiscovered conventional oil and natural gas resources as of January 1, 1987. Additional data received after that date are not incorporated in this assessment. The estimates are based upon a coordinated assessment of the known and possible petroleum-bearing onshore and offshore geologic provinces of the United States. Estimates for the onshore geologic provinces and adjoining State offshore areas were developed by the USGS. Estimates for the Federal offshore areas of the United States were developed by the MMS.

Great uncertainties are inherent in estimating undiscovered quantities of oil and gas. The estimates in this report are derived from judgments based upon a variety of geologic data, records of exploration successes and failures, production histories, assumptions concerning economic and technological conditions, and several appraisal methods. Both agencies used methodologies developed to assist in making decisions under conditions of uncertainty. The methodologies were appropriate to the data available, and the results are presented as ranges of values with associated probabilities of occurrence. Oil and gas plays were the basic building blocks for the assessment.

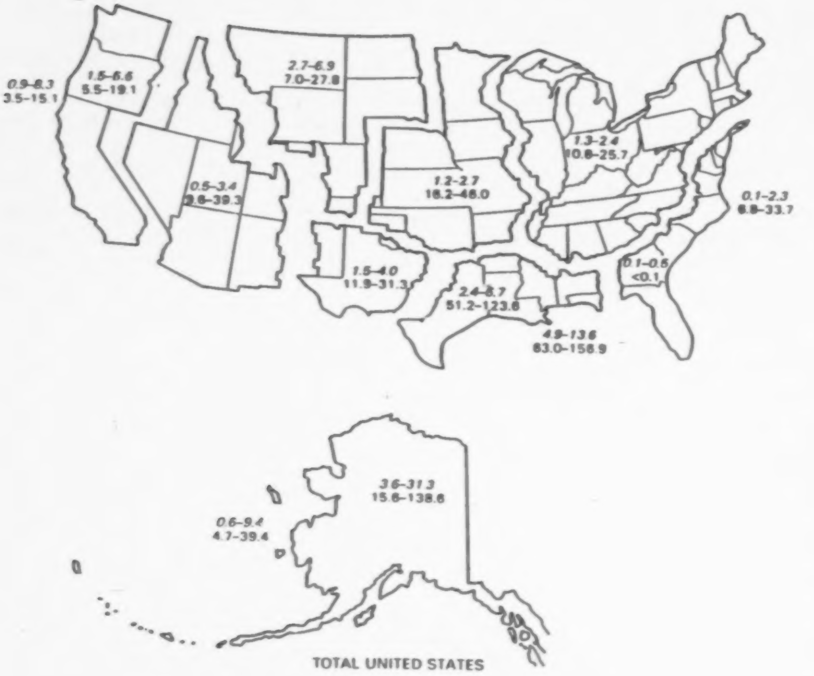
The estimates presented in this report should be viewed as indicators of the petroleum potential of the geologic provinces and regions. The assessment is based on the understanding of petroleum geology developed within the two agencies over time and specifically incorporates geologic, engineering, and economic data resulting from petroleum exploration and development activities in the various geologic provinces since the earlier publications (Dolton and others, 1981; Cooke, 1985).

For the purposes of this assessment, the United States was divided into nine onshore regions consisting of 80 geologic provinces and four offshore regions consisting of 35 geologic provinces. The regions correspond, in general, to those addressed by USGS Circular 860 and those addressed by MMS OCS Report 85-0012 (both cited above). The offshore areas include the OCS Exclusive Economic Zone (EEZ) adjacent to the lower 48 States and Alaska. Hawaii and the Trust Territory of the Pacific Islands were not included.

The information presented herein regarding known reserves of discovered oil and natural gas was derived from separate sources for the onshore and offshore areas. The reserve estimates for the onshore and State offshore areas were derived from data published by the Energy Information Administration (EIA) of the U.S. Department of Energy, specifically EIA's publication entitled "U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves—1986 Annual Report" (1987a). The reserve estimates for the Federal offshore areas are based upon data published by the MMS in two reports: "Estimated Oil and Gas Reserves, Gulf of Mexico, December 31, 1986" (Hewitt and others, 1987) and "Estimated Oil and Gas Reserves, Pacific Outer Continental Shelf, December 31, 1986" (Raftery and Wolfson, 1987). Published MMS reserve estimates were supplemented in this report to include estimates for fields that lacked estimates at the time the earlier publications were prepared, or, in the case of Alaska offshore areas, supplemental information from published reports is presented in lieu of proprietary reserve estimates.

COMMODITIES ASSESSED

The commodities assessed in this study are crude oil, natural gas, and natural gas liquids that exist in conven-



Undiscovered recoverable conventional oil *33.2–69.9* billion barrels

Undiscovered recoverable conventional gas 306.8–507.2 trillion cubic feet

Figure 1. Distribution of estimated undiscovered recoverable conventional oil and gas resources of the United States by region. Figures are reported as a range of values, at 95-percent and 5-percent probabilities, in billions of barrels for oil and trillions of cubic feet for gas. State waters are included in onshore estimates. Oil figures are slanted; gas figures are vertical. Respective range values are not additive and must be aggregated by probability methods.

tional reservoirs. *Crude oil* is a mixture of hydrocarbons that is present in a liquid state in underground reservoir rocks and remains in a liquid state as it is produced from wells. *Natural gas* is a mixture of gaseous hydrocarbons classified by occurrence into the following categories:

Associated gas—free natural gas, occurring as a gas cap, in contact with and above an oil accumulation within the reservoir;

Dissolved gas—natural gas dissolved in crude oil within the reservoir; and

Nonassociated gas—natural gas that is not associated with or not in contact with crude oil within a reservoir.

Natural gas liquids (NGL) are "those portions of reservoir gas that are liquefied at the surface in lease separators, field facilities, or gas processing plants. Natural gas liquids include but are not limited to ethane, propane, butanes, pentanes, natural gasoline, and condensate" (American Petroleum Institute, 1976, p. 6). Both oil and natural gas normally include small quantities of various nonhydrocarbon impurities.

Amounts of oil and gas are reported as standard stock tank barrels of crude oil (42 gallons per barrel) and standard cubic feet of gas (14.73 pounds per square inch and 60 °F), respectively. Gas estimates include volumes of hydrocarbon gases only.

The estimates of conventional resources in this report do not include resources from very heavy oil deposits or tar deposits, oil shales, gas from low-permeability "tight" sandstone reservoirs, fractured shale reservoirs having in situ reservoir permeabilities to gas less than 0.1 millidarcy, coal bed methane, gas in geopressured shales and brines, or gas hydrates. These kinds of occurrences, however, are recognized as important future sources of hydrocarbons, and some oil and gas production is currently derived from them. For example, some gas is produced from fractured shales and low-permeability sandstones in the Appalachian basin, and some gas is produced from low-permeability sandstones in the Rocky Mountains, Colorado Plateau, Mid-Continent, and Gulf Coast regions. Also, some coal bed methane is produced in the Black Warrior and San Juan basins. Geopressured methane has been produced in the Gulf Coast basins, and some oil has been produced from shallow heavy oil deposits in Missouri and Kentucky.

There are two principal reasons for excluding these kinds of unconventional resources from this study. First, they are, for the most part, discovered, and their geographic and stratigraphic distribution is largely known. This study assesses *undiscovered* conventional oil and gas resources. Secondly, in many instances, they contain very large in-place volumes of hydrocarbons of such uncertain recoverability, because of economics and extraction technology, that they represent a class of resources that is best treated separately, particularly with reference to estimates of available recoverable resources. These occurrences require a level of geologic data and interpretation that is not generally available in order to support engineering and economic studies needed to assess their recoverability. A discussion of resources in several of these categories is presented in the USGS–MMS Working Paper, Open-File Report 88-373, and in Fisher and others (1988). Although considered "unconventional" for the purposes of this joint assessment, portions of these types of occurrences are sometimes included in oil and natural gas resource estimates and in reserve estimates by others using different assumptions of recoverability.

In some geologic settings, the boundary between conventional and unconventional resources is gradational and, given the data available, difficult to draw. In some areas it is nearly impossible to completely separate unconventional resources from conventional resources. However, we have not included large volumes of unconventional resources, nor have we excluded large volumes of conventional resources from the estimates. There is little question that unconventional resources will require much more study to determine their long-term impact on the oil and gas resource picture.

Estimates of undiscovered resources do not include reserve estimates, nor do they include volumes that may yet be found in new pay zones in known fields or extensions to known fields. The latter are reported as inferred reserves and are shown schematically on figure 2.

The estimates presented in the report are provided in two categories: (1) undiscovered recoverable resources and (2) undiscovered economically recoverable resources. Undiscovered recoverable resources are in undiscovered accumulations analogous to those in existing fields and are producible with the current recovery technology and efficiency but without reference to economic viability. These accumulations are generally of sufficient size to be amenable to conventional recovery technology. These resources occupy the area of the heavily framed box in figure 2.

Undiscovered economically recoverable resources are those resources assessed in the undiscovered recoverable resources category that are economically recoverable under conditions of current technology and imposed economic criteria. The estimates of the economically recoverable resources were predicated upon a January 1, 1987, oil price of $18 per barrel and a natural gas price of $1.80 per thousand cubic feet (MCF), with adjustments over future years for price and cost progressions and other economic factors influencing industry development activity in the United States (a more detailed discussion appears in the section "Economic Parameters"). Exploration costs were not included. Except for the onshore lower 48 States, where pipelines are generally in place, oil and gas transportation and pipeline development costs were included. Undiscovered accumulations were assigned a January 1, 1987, discovery date and then were determined to be economically recoverable if projected cash flows were sufficient to pay development and operating costs and to provide an after-tax rate of return averaging 8 percent. This analysis eliminates from the economic category all estimated accumulations smaller than the calculated minimum economic field size (MEFS), and its impact is most significant in high-cost operating environments such as the Arctic and offshore. The economically recoverable resources occupy the hachured area on the resources classification chart (fig. 2).

Estimates of reserves are included to provide a measure of those resources that have been identified (discovered) and to provide a frame of reference for analyzing the undiscovered quantities. Reserve estimates are developed from the Energy Information Administration data (1987a) and from the MMS reserves studies.

TERMINOLOGY

The terminology in this report represents standard definitions and usage practiced by the oil and natural gas industry and the resource estimation community. A detailed listing of common industry definitions is not included; however, several definitions that are essential to the proper understanding of the information in this report are presented. These definitions should be viewed as general explanations rather than strict technical definitions of the terms being addressed.

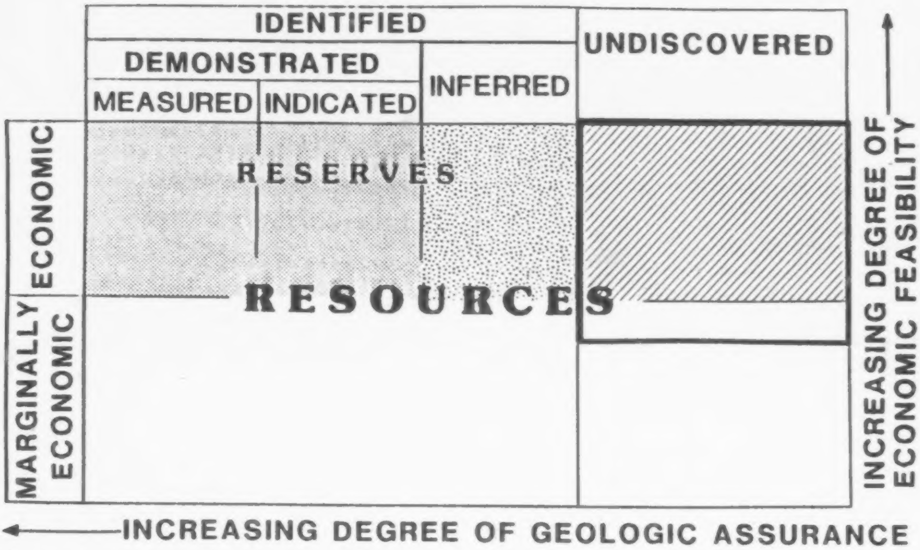


Figure 2. Diagrammatic representation of petroleum resource classification (modified from U.S. Bureau of Mines and U.S. Geological Survey, 1980). The figure represents conventional oil and gas resources. The area within the heavy frame on the upper right represents the undiscovered recoverable resources estimated in this study. The hachured area within the heavy frame indicates the quantities of undiscovered resources that are estimated to be economically recoverable.

Undiscovered resources.—Resources estimated to exist, on the basis of broad geologic knowledge and theory, outside of known fields or known accumulations. Also included are resources from undiscovered pools within known fields to the extent that they occur as unrelated accumulations controlled by distinctly separate structural features or stratigraphic conditions.

Undiscovered recoverable resources.—Resources in undiscovered accumulations analogous to those in existing fields producible with current recovery technology and efficiency but without reference to economic viability. These accumulations are considered to be of sufficient size and quality to be amenable to conventional recovery technology. These resources occupy the area of the heavily framed box in figure 2.

Undiscovered economically recoverable resources.—Part of the undiscovered recoverable resource category that is economically recoverable under conditions of current conventional technology and imposed economic assumptions. The economically recoverable resources occupy the hachured area on the resources classification chart (fig. 2).

Conventional resources.—Resources included in this category are crude oil, natural gas, and natural gas liquids that exist in conventional reservoirs or in a fluid state amenable to extraction techniques employed in traditional development practices, as indicated below. They occur as discrete accumulations.

They do not include oil occurring within extremely viscous and intractable heavy oil deposits, tar deposits, or oil shales, or gas from low-permeability "tight" sandstone and fractured shale reservoirs having in situ permeabilities to gas of less than 0.1 millidarcy, coal bed methane, gas in geopressured shales and brines, or gas hydrates.

Conventionally recoverable resources.—Oil and natural gas resources that may be produced at the surface from a well bore as a consequence of natural pressure within the subsurface reservoir; artificial lifting of oil from the reservoir to the surface, where economically applicable; and the maintenance of reservoir pressure by means of water or gas injection.

Measured reserves.—Part of the identified economic resource that is estimated from geologic evidence supported directly by engineering data. They are demonstrated with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions (fig. 2) and are generally equivalent to "proved reserves" (Energy Information Administration, 1987a).

Indicated reserves.—Reserves that are in known productive reservoirs in existing fields, in addition to measured reserves, expected to respond to improved recovery techniques, such as fluid injection, (1) where an improved recovery technique has been installed, but its effects are not yet known or (2) where an improved technique has been installed in another similar reservoir, and the results of that installation can be used to estimate the quantity of additional resources (fig. 2).

Inferred reserves.—That part of the identified economic resources, over and above measured and indicated reserves, that will be added through extensions and revisions and with the addition of new pay zones in discovered fields (fig. 2).

Oil-equivalent gas.—Gas volume that is expressed in terms of its energy equivalent in barrels of oil (BOE). Approximately 6,000 cubic feet of gas equals one BOE.

Field.—A single pool or multiple pools of hydrocarbons grouped on, or related to, a single structural or stratigraphic feature.

Prospect.—A geologic feature having the potential for trapping and accumulating hydrocarbons.

Play.—A group of geologically related known accumulations or undiscovered accumulations and (or) prospects having similar hydrocarbon sources, reservoirs, traps, and geologic histories.

Cumulative probability distributions.—The resource estimates are derived in the form of cumulative probability distributions (fig. 3). These distributions include the resource estimates reported in this publication: a low estimate having a 95-percent probability (19 in 20 chance) of at least that amount (F_{95}), a high estimate having a 5-percent probability (1 in 20 chance) of at least that amount (F_5), and a mean estimate representing an average of all of the possible resource outcomes. These cumulative probability distributions can be either conditional or risked (unconditional).

Conditional estimates.—Estimates of the volumes of undiscovered oil or natural gas in an area, given the condition that undiscovered recoverable oil or natural gas actually occurs. For economically recoverable resources, the condition is that one or more undiscovered commercial accumulations of hydrocarbons exist in the area. Conditional estimates, therefore, do not incorporate the risk that the area may be devoid of the hydrocarbons assessed.

Marginal probability of hydrocarbons.—An estimate, expressed as a decimal fraction, of the chance that oil or natural gas exists in an area. The marginal probability is the complement of the risk (1 minus the risk) that an area is devoid of hydrocarbons. For recoverable resources, the marginal probability represents the probability that oil or natural gas exists in at least one accumulation of the minimum size assessed. For economically recoverable resources, the marginal probability represents the chance that commercial quantities of oil or natural gas exist in at least one accumulation in the area being assessed, under the economic conditions and price scenario applicable to the assessment.

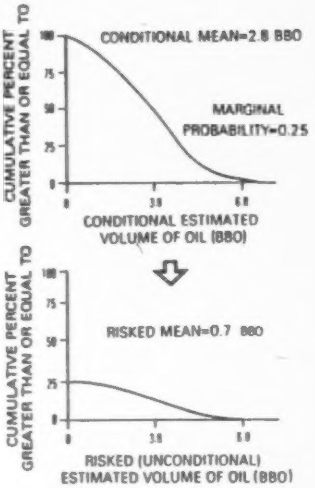
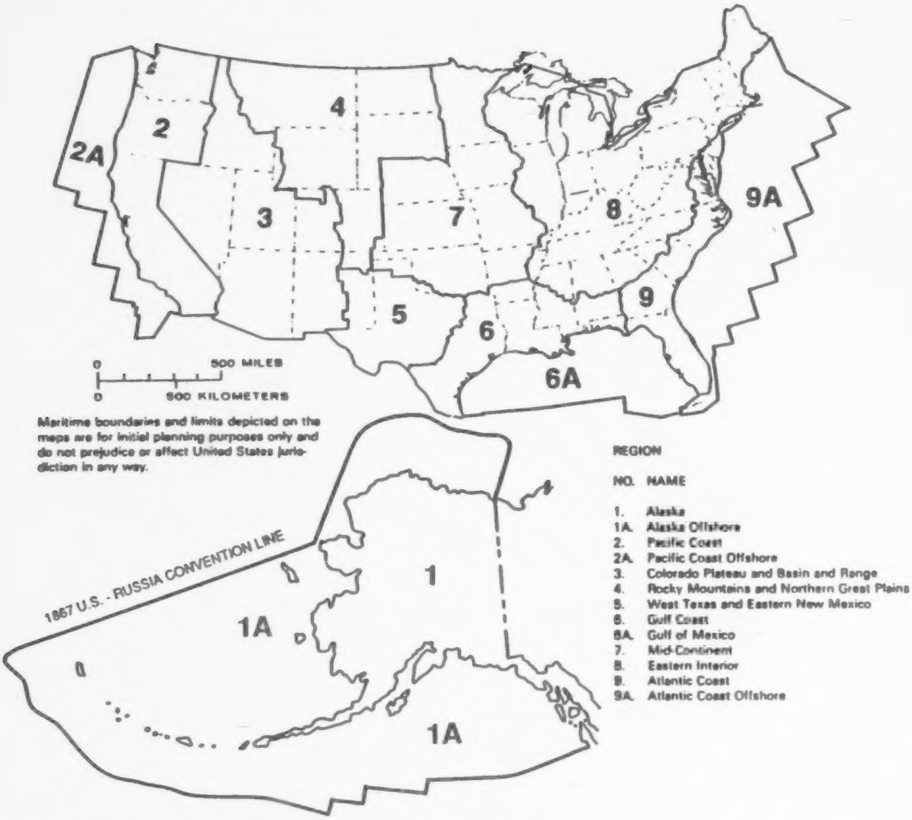


Figure 3. Example of cumulative probability distributions for estimated resources showing relationship between conditional and risked (unconditional) estimates. BBO, billion barrels of oil.

Risked (unconditional) estimates.—Estimates of the volumes of oil or natural gas that may exist in an area, including the possibility that the area is devoid of oil or natural gas. The risked mean quantity may be determined through multiplication of the mean of a conditional distribution by the related marginal probability (fig. 3). However, other points of the risked distribution must be determined by use of probabilistic methods. *Estimates presented in this report are risked (unconditional) estimates,* with the sole exception of those presented in appendix B.

AREAS OF STUDY

The oil and gas resources of the United States were evaluated on the basis of interpretation of the geology of its petroleum provinces. For this study, the United States was divided into 13 petroleum regions, 9 onshore and 4 offshore (fig. 4). These regions correspond in general to those appraised in 1980 (Dolton and others, 1981) and 1984 (Cooke, 1985). The onshore regions include State water areas. The offshore areas, designated by the letter "A" after the region number, include the Outer Continental Shelf and



Maritime boundaries and limits depicted on the maps are for initial planning purposes only and do not prejudice or affect United States jurisdiction in any way.

REGION NO.	NAME
1.	Alaska
1A.	Alaska Offshore
2.	Pacific Coast
2A.	Pacific Coast Offshore
3.	Colorado Plateau and Basin and Range
4.	Rocky Mountains and Northern Great Plains
5.	West Texas and Eastern New Mexico
6.	Gulf Coast
6A.	Gulf of Mexico
7.	Mid-Continent
8.	Eastern Interior
9.	Atlantic Coast
9A.	Atlantic Coast Offshore

Figure 4. Petroleum regions assessed in this study. Heavy lines are region boundaries; dotted lines are State boundaries.

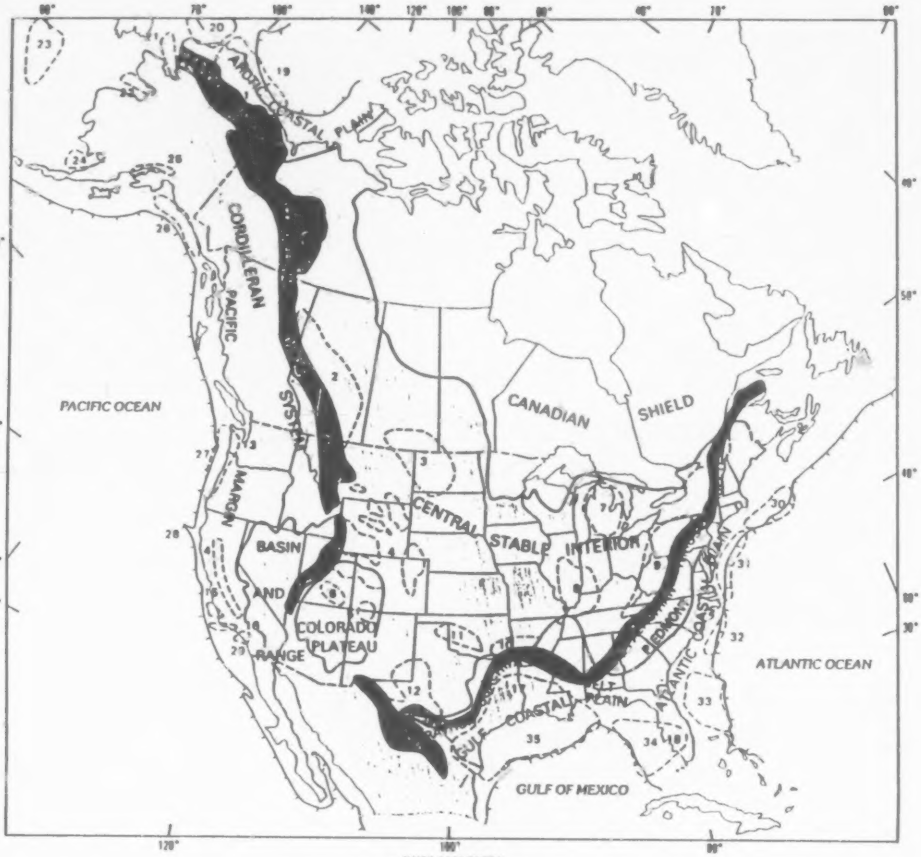
the Exclusive Economic Zone adjacent to the lower 48 States and Alaska. The 13 regions were further divided into 115 provinces (appendix A, figs. A1 and A2). Hawaii and the Trust Territory of the Pacific Islands were not included.

The regions shown in figure 4 are geographic in character; however, their formulation represents an attempt to group the individual petroleum provinces along broad geologic lines (provinces are shown in detail in appendix A).

Individual provinces are based on natural geologic entities and may include a single dominant structural element or a number of contiguous elements. Their boundaries, following State and county lines where possible, facilitate the use of production, reserve, and other data reported for political units. Provinces were named for structural or geographic features within their boundaries.

GEOLOGIC FRAMEWORK

The distribution of oil and gas resources in the United States is best understood within the framework of the geology of the North American continent. In essence, the continent consists of a relatively stable interior surrounded by zones of more highly deformed rocks (fig. 5). The Canadian Shield is an outcrop of the old, tectonically stable


PACIFIC OCEAN
ARCTIC COASTAL PLAIN
CORDILLERAN
PACIFIC
SYSTEM
MARGIN
BASIN
AND
RANGE
COLORADO
PLATEAU
CANADIAN
SHIELD
CENTRAL STABLE INTERIOR
APPALACHIAN
PIEDMONT
ATLANTIC COASTAL PLAIN
GULF COASTAL PLAIN
ATLANTIC OCEAN
GULF OF MEXICO
120°
100°
80°
50°
40°
30°

EXPLANATION
PRINCIPAL BASINS (OUTLINED)

ONSHORE

1. North Slope basin
2. Alberta basin
3. Williston basin
4. Rocky Mountain foreland basins, including Wind River, Bighorn, Powder River, Crazy Mountains, Green River, Uinta–Piceance, and Denver basins
5. San Juan basin
6. Paradox basin
7. Michigan basin
8. Illinois basin
9. Appalachian basin
10. Arkoma basin
11. Anadarko basin
12. Permian basin
13. Western Oregon-Washington basin
14. Sacramento basin
15. San Joaquin basin
16. California basins, including Los Angeles, Ventura, and Santa Maria basins
17. Northern Gulf basin
18. South Florida basin

OFFSHORE

19. Beaufort Sea basins
20. Chukchi basins
21. Hope basin
22. Norton basin
23. Navarin basin
24. Bristol basin
25. Cook Inlet basin
26. Gulf of Alaska Tertiary basin
27. Oregon-Washington basins
28. Northern and Central California basins
29. Southern California basins, including Santa Maria, Santa Barbara Channel, Los Angeles, Santa Monica, and Borderland basins.
30. Georges Bank basin
31. Baltimore Canyon basin
32. Carolina Trough basin
33. Blake Plateau
34. South Florida basin
35. Gulf of Mexico basin

┴──┴ Continental Margin

■ Major thrust and fold belt frontal zones

Figure 5. Generalized tectonic map of North America showing principal sedimentary basins (modified from King, 1977).

rocks that form the core of the continent. These igneous and metamorphic rocks are generally not prospective sites for petroleum. In the Central Stable Interior, similar crystalline rocks are overlain by a relatively thin cover of sedimentary rock filling a number of structurally uncomplicated basins separated by broad arches that contain abundant hydrocarbon resources. Regional deformation of margins of this Central Stable Interior is particularly strong at its western and southern sides. Basins at the margin of the Central Stable Interior tend to be deeper and structurally more complex than those of the interior and are often highly productive of oil and gas, as typified by the Permian and Anadarko basins.

Belts of rock deformed by intense folding and thrusting ring the Central Stable Interior. These are the Cordilleran thrust belt, which stretches from Alaska to Mexico, the Appalachian thrust belt, the Ouachita thrust belt, and the Marathon thrust belt. They locally contain significant hydrocarbon resources.

East of the Appalachian thrust belt are the crystalline rocks of the Piedmont. Mesozoic and Cenozoic sedimentary rocks of the Atlantic Coastal Plain lap onto the Piedmont to form a wedge of sedimentary rocks that thickens seaward along most of the Atlantic margin. Mesozoic and Cenozoic sedimentary rocks of the Gulf Coastal Plain similarly lap onto the Marathon and Ouachita thrust belts and form a wedge that thickens into the Gulf of Mexico.

The Cordilleran System, the major structural element of western North America, also includes major subelements, particularly the Basin and Range and the Pacific margin. The complex structures of this part of the continent suggest that it has been tectonically active throughout much of Phanerozoic time.

Alaska is divided into two major structural elements. The northern element consists of the Brooks Range, which is part of the Cordilleran thrust belt, and all areas north to the Arctic Ocean. The southern element includes all of Alaska south of the Brooks Range and has a different and more complex geologic history than does the northern element.

Areas of the United States that have produced oil and gas are shown in figure 6, and the ages of major productive and prospective rocks in each region are shown in figure 7. The Central Stable Interior (Regions 5, 7, 8, and parts of 4) produces mainly from relatively old rocks of Paleozoic age. To the west, in Regions 3 and 4, petroleum in the intermontane and foreland basins is produced from rocks of Paleozoic and Mesozoic age and, in some instances, Cenozoic age.

The thrust belts of the Cordilleran System produce oil and gas from Mesozoic and Paleozoic reservoir rocks, whereas the Ouachita and Appalachian thrust belts include only Paleozoic reservoirs.

A thick sequence of Mesozoic and Cenozoic sedimentary rocks characterizes both the Gulf and Atlantic margins. In the Gulf Coastal Plain (Region 6) and adjoining Gulf of Mexico (Region 6A), these young rocks have produced large quantities of hydrocarbons. Other than peninsular Florida, the Atlantic margin (Regions 9 and 9A) has not produced commercial amounts of petroleum; however, noncommercial discoveries of gas have been made in Mesozoic rocks of the offshore Baltimore Canyon area.

A series of productive sedimentary basins extends from New Mexico through Montana east of the Cordilleran System and at the west margin of the Central Stable Interior, including the Colorado Plateau (parts of Regions 3 and 4). Hydrocarbon production in this area is from rocks of Paleozoic, Mesozoic, and Cenozoic age. Within the Basin and Range, only minor production has been established. To the far west, at the Pacific margin (Region 2) are the very rich Cenozoic basins of coastal California and the Mesozoic-Cenozoic basins of the Great Valley.

Alaska's production (Regions 1 and 1A) is from two areas. Cook Inlet, in southern Alaska, produces from rocks of Cenozoic age; more importantly, the Arctic Coastal Plain of the North Slope, which includes the supergiant Prudhoe Bay field, produces from rocks of Paleozoic, Mesozoic, and Cenozoic age.

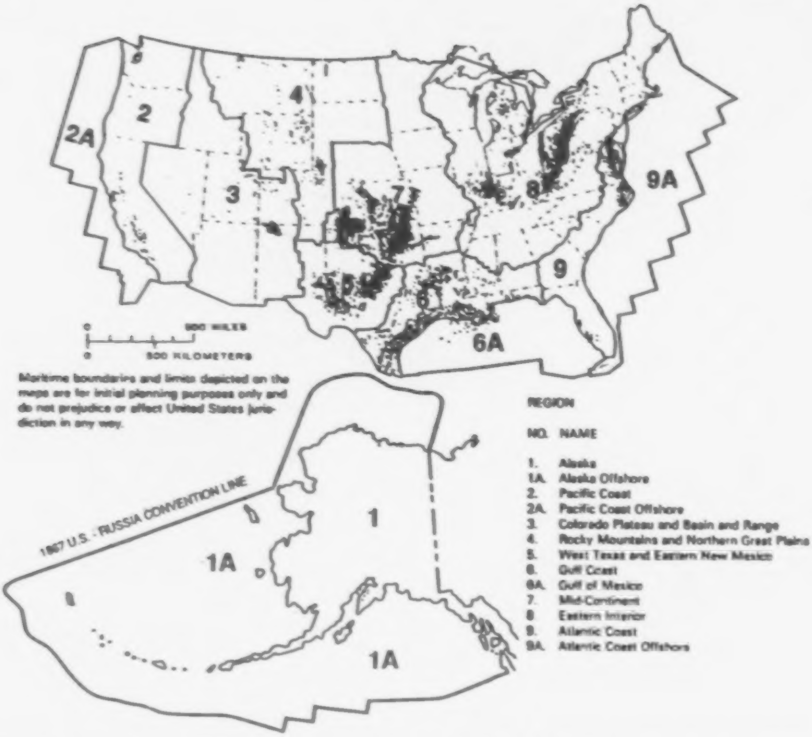
The following regional discussions outline the geology of the United States as related to known and prospective petroleum potential, generally from west to east. These discussions represent a very brief synthesis of the petroleum geology of each region. The petroleum production, reserves, and resource potential of each region are shown by table 2 (p. 19).

Onshore Regions and State Waters

Region 1, Alaska

The geology of Region 1 is varied and complex. Much of the region is composed of a vast mosaic of crustal terranes that have accreted to the ancestral North American cratonic margin. Associated with this complex are sedimentary basins, some of which have been strongly deformed and contain altered rocks of little petroleum potential. However, many younger, less deformed basins contain significant potential. The most significant in terms of petroleum are the composite basins, such as the North Slope basin, which encompasses the northern part of the Brooks Range and the Arctic Coastal Plain, including parts of the offshore (fig. 5). Large quantities of oil and gas are present in Triassic reservoirs at Prudhoe Bay field (the largest oil field in North America), Mississippian reservoirs at Endicott field, and in Tertiary reservoirs at Kuparuk River field. Significant additional potential is estimated in Paleozoic, Mesozoic, and Tertiary reservoirs in this basin, including the highly folded rocks of the northern Brooks Range.

Nonmarine basins containing Cenozoic rocks constitute the most numerous of Alaskan basins but are poorly


2A
2
3
4
5
6
6A
7
8
9
9A
1
1A
1A
0
500 MILES
0
500 KILOMETERS
1867 U.S. - RUSSIA CONVENTION LINE
REGION
NO. NAME
1. Alaska
1A. Alaska Offshore
2. Pacific Coast
2A. Pacific Coast Offshore
3. Colorado Plateau and Basin and Range
4. Rocky Mountains and Northern Great Plains
5. West Texas and Eastern New Mexico
6. Gulf Coast
6A. Gulf of Mexico
7. Mid-Continent
8. Eastern Interior
9. Atlantic Coast
9A. Atlantic Coast Offshore

Maritime boundaries and limits depicted on the maps are for initial planning purposes only and do not prejudice or affect United States jurisdiction in any way.

Figure 6. Map of petroleum regions and general distribution of oil and gas fields in the United States (modified from Vlissides and Quirin, 1964).

known because of extensive alluvial cover. In general, they occupy the interior parts of Alaska. The Cook Inlet basin, the best known example, contains large accumulations of oil and gas onshore and in State waters. These basins are characterized by nonmarine fill and are often associated with major faulting. Reservoirs are primarily sandstones. Most of these basins are considered to be gas prone, and undiscovered resources are estimated to be small.

Basins containing Cenozoic marine rocks are most commonly found on the Bering Sea and Pacific margins of Alaska. They include the Bristol and Gulf of Alaska basins. Those of the Pacific margin generally lie in a forearc setting and have accumulated thick sequences of Tertiary marine sediments, including transported terranes. Significant hydrocarbon accumulations have not yet been discovered in these areas, and the potential appears limited by poor reservoir and source-rock characteristics.

The considerable petroleum potential of onshore Alaska is concentrated in the North Slope region, about equally distributed between the coastal plain and foothills areas of the North Slope basin. Development of future discoveries on the North Slope and elsewhere in onshore Alaska will be strongly influenced by the proximity of those discoveries to the existing pipeline system.

Region 2, Pacific Coast

Because of the active tectonic history of this region, during which older basins have been destroyed and new ones created, rocks prospective for petroleum are limited mostly to basins that formed during Mesozoic and Cenozoic time.

Most of western Oregon and Washington is the site of a forearc basin composed of great thicknesses of sedimen-

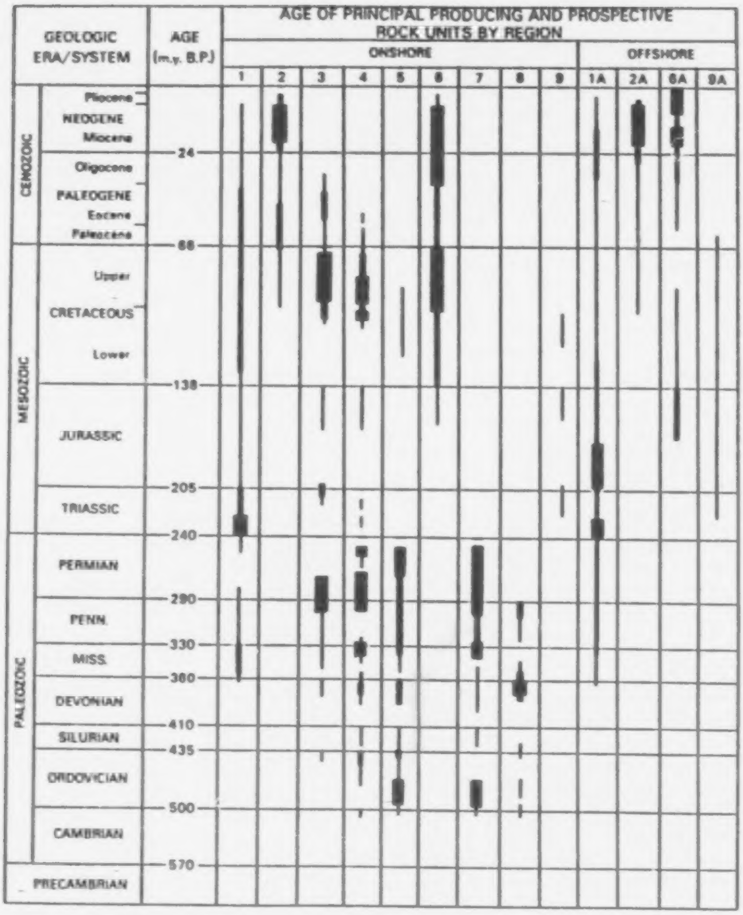


Figure 7. Age and importance of principal producing and prospective reservoir rocks by region. Width of bar is proportional to significance of reservoir. See figure 6 for names of numbered regions.

tary and volcanic rocks of Tertiary age. The area is complexly folded and faulted, and only small occurrences of gas and scattered shows of oil have been reported to date.

Most of eastern Oregon and Washington and part of northeastern California is a high plateau composed of a thick volcanic cover. Because of this cover, the basins in the region are poorly defined and prevolcanic rocks not well understood; however, thick sequences of Tertiary sedimentary rocks are known to be present locally beneath the volcanics and are considered to have potential for gas resources.

The Great Valley of California, composed of the San Joaquin and Sacramento basins, is a forearc basin that has a thick sequence of marine and nonmarine rocks, which range in age from Late Jurassic to Holocene. The Great Valley is highly productive of gas in the north and of oil in the south.

The area has a long history of exploration, but future potential appears rather limited. Undiscovered resources are postulated to be in deeper parts of the basins, in subtle traps, in complex traps within producing trends, and in a few relatively unexplored areas.

The California coastal basins are located south and west of the Great Valley. They are small but typically contain very thick Neogene sedimentary rock fill. Several of these basins have been exceedingly rich in discovered petroleum, particularly the Los Angeles, Ventura, and Santa Maria basins. Principal producing zones are Miocene and Pliocene rocks, primarily sandstones and fractured siliceous rocks. Because of the extent of exploration, the potential for undiscovered resources in these areas is considered modest, with most of the undiscovered oil believed to be in deep parts of the basins, in subtle traps, in complex traps in producing trends, and in other areas that have been explored incompletely.

Region 3, Colorado Plateau and Basin and Range

The geology of this region is exceedingly diverse and complex. Major structural elements reflect Laramide and post-Laramide tectonism. Many of the basins within the region are structural basins formed during this period. However, also included are several basins of Paleozoic age, a major thrust belt, a portion of an extensive rift system, and a buried thrust belt that has a surface tectonic overprint of basin and range block faulting. Reservoir rocks are varied, ranging in age from Ordovician to Tertiary, and include both sandstones and carbonates.

The intermontane basins of the region, such as the Uinta Piceance and San Juan basins, and the Cordilleran thrust belt are particularly important in terms of petroleum resources. Major oil and gas fields have been found in these areas. To date, only a few fields have been discovered in the lightly explored Basin and Range area. Some basins in the region also host thick "tight gas sand" sequences, which are not the subject of this report.

Region 4, Rocky Mountains and Northern Great Plains

This region is characterized by many Laramide intermontane basins, such as the Powder River and Bighorn basins, which are separated by major uplifts; the cratonic Williston basin; several major Paleozoic paleostructural elements; and the Montana part of the Cordilleran thrust belt. Nineteen separate sedimentary basins are included here. Producing reservoirs are clastic and carbonate rocks that range in age from Cambrian to Tertiary.

Exploration in this region has resulted in the discovery of major reserves of oil and gas, including several giant fields. Most of the larger fields are structurally controlled; however, recent exploration has led to exploitation of many stratigraphic traps. The potential for undiscovered hydrocarbons varies greatly within the region, but overall, substantial undiscovered resources remain. This region also contains large volumes of gas in unconventional ("tight gas sand") reservoirs.

Region 5, West Texas and Eastern New Mexico

The main structural elements of the area include the Permian basin, the Bend arch-Fort Worth basin area, and the Marathon-Ouachita thrust belt on the south. Almost the entire Paleozoic section of the region is productive. The Permian basin is a large asymmetric structural depression on the southwestern margin of the North American craton that has filled with a thick Paleozoic rock sequence. Region 5 is second only to the Gulf Coast Region (Region 6) in cumulative production of oil and gas in the United States, and the Permian basin is the most prolific part. The Permian basin is also the most important area in the region for undiscovered resources; the Bend arch-Fort Worth basin area is a distant second. The Delaware-Val Verde portion of the Permian basin is particularly important for gas.

Region 6, Gulf Coast

This region consists fundamentally of a large, compound Mesozoic and Cenozoic basin or geocline formed on the southern margin of the North American continent. Several subbasins occur within it. Thick, seaward-offlapping wedges of sediment have accumulated above widespread Jurassic salt deposits and localized salt basins. The overall basin, known as the Northern Gulf basin, is characterized by deformation associated with gravity movements and flowage of salt and underconsolidated Cenozoic sediments. The northern basin rim is bounded by a series of arcuate growth fault systems that are downthrown to the south and by similar, but younger, parallel fault systems to the south. Salt domes of great vertical relief penetrate the sedimentary section and are prevalent over large areas.

Mesozoic rocks in the region contain both sandstone and carbonate reservoirs; however, Cenozoic rocks, which are the principal exploration targets in the region, are characterized by sandstones of excellent reservoir quality. The region contains a wide spectrum of traps, including growth fault and rollover structures, salt domes, anticlines and faulted structures, and a variety of stratigraphic traps.

The region, the most prolific petroleum region in the United States (see table 2), contains a large number of giant fields, including the old East Texas field, which is an immense stratigraphic trap, and recent major discoveries in the deep Jurassic section. The Gulf Coast Region continues to have significant potential for undiscovered resources of both oil and gas.

Region 7, Mid-Continent

This region occupies a large part of the Central Stable Interior and contains two deep basins, the Anadarko on the west and the Arkoma on the east, both containing very thick sequences of Paleozoic rocks. A series of shallow basins that are separated by broad uplifts occurs along the northern margin. The region is bounded along its southern margin by the strongly deformed Marathon-Ouachita thrust belt and by a complex of major mountain uplifts and associated basins.

Oil in this region is concentrated in the States of Kansas and Oklahoma. Traps are variously structural, stratigraphic, or a combination of both, and reservoirs are sandstones and carbonates of Paleozoic age. Over half the oil in Kansas occurs on a regional high, the Central Kansas uplift. The major gas field in the region, the Hugoton-Panhandle field, occupies parts of Kansas, Oklahoma, and Texas and is on the western side of the Anadarko basin. Large gas resources have also been found in the Pennsylvanian sandstones of the Arkoma basin in Arkansas and Oklahoma. Oklahoma's major oil-producing areas include the Anadarko basin and the shelf areas and uplifts bordering it to the north and east. Significant undiscovered resources are believed to exist in the region, largely in lesser explored areas, such as the deep Anadarko basin.

Region 8, Eastern Interior

This region comprises several large basins and uplifts within the eastern part of the craton. Two major intracratonic basins, the Michigan and Illinois basins, are separated from the Appalachian basin to the east by the Cincinnati Arch and Nashville Dome. The east side of the foreland Appalachian basin is bounded by the highly deformed rocks of the Appalachian thrust belt.

The major producing areas in the region are the Appalachian, Michigan, and Illinois basins. Reservoirs in these basins include both sandstones and carbonates, ranging in age from Cambrian to Pennsylvanian. Not only are structural traps important, but much oil and gas is trapped stratigraphically. Although exploration is in a very mature stage in this region, significant undiscovered resources are believed to exist. Currently, significant discoveries are being made in deep Cambrian-Ordovician clastic reservoirs and in Silurian pinnacle reefs of the Michigan basin.

Region 9, Atlantic Coast

The Atlantic Coast Region, which extends through peninsular Florida, embraces both early Mesozoic rift basins and an overlying wedge of younger rocks. Elongate, extensional rift basins containing Upper Triassic and Lower Jurassic rocks of nonmarine origin are found exposed in the Appalachian Piedmont from Georgia to northern Massachusetts and are inferred to occur beneath the coastal plain sediments. Sedimentary rocks of the coastal plain that cover these basins include largely terrigenous clastics and marine carbonates of late Mesozoic, Cenozoic, and Holocene age. From north to south, these younger rocks become increasingly carbonate rich; south of the Peninsular Arch in Florida, the sediment wedge becomes almost exclusively carbonate and anhydrite and thickens into the South Florida basin.

Although a small amount of oil has been found in the South Florida basin, oil production has not been established elsewhere in the region, and the Atlantic Coastal Plain generally appears to have little petroleum potential.

Federal Offshore Regions

Region 1A, Alaska Offshore

The Alaska region can be divided into three areas of significant geologic uniformity: (1) the Arctic subregion, including the Beaufort, Chukchi, and Hope areas, (2) the Bering Sea subregion, and (3) the Gulf of Alaska, which also includes Cook Inlet. The Arctic subregion has the highest potential for significant future discoveries, particularly in the untested Chukchi Sea. In the Beaufort Sea, the offshore extension of coastal plain Ellesmerian rocks has resource potential.

Provinces in the Bering Sea subregion have smaller resource estimates as compared with the last assessment, largely as a result of disappointing drilling results, particularly in the once highly regarded Navarin basin. Twenty-four exploratory wells have been drilled in the Bering OCS with no discoveries. Geological analysis of the results of the drilling program shows that the lack of success can be attributed to poor source-rock characteristics. Additionally, reservoir sands tend to be contaminated with fine-grained particulates, and sealing lithologies are poorly developed.

Provinces in the Gulf of Alaska have significant potential for development. Wells drilled in the area have yielded noncommercial shows. However, the area tends to be gas prone, but gas is not currently considered to be commercially viable. Lower Cook Inlet appears to have little potential despite its proximity to production in adjacent State waters.

Region 2A, Pacific Coast Offshore

The geologic and petroleum framework of this region is characterized by an active history of faulting, earthquakes, and deformation that has resulted in destruction of older basins and creation of new ones. The deformation has produced numerous structures that may trap hydrocarbons, but the destruction of older basins has limited exploration targets mainly to younger rocks of Cenozoic age.

On the basis of geology and exploration history, the region can be subdivided into three parts: southern, central, and northern. In the southern part, from the Santa Barbara Channel southward, provinces offshore southern California comprise a mature producing area in which extensive leasing and exploration have resulted in the discovery of 14 significant fields. Reservoirs are dominantly sandstone of

Cenozoic age. In the central part, from the western Santa Barbara Channel to Cape Mendocino, provinces are anticipated to have fractured shale reservoirs of the Monterey and Point Arena Formations. The evidence from exploration wells drilled offshore in this play between 1964 and 1967, along with major discoveries in the Santa Maria basin province, demonstrates that this part of the Pacific OCS has the best chance for a significant discovery of petroleum north from southern California through the Bering Sea of Alaska. In the northern part, exploration in OCS provinces of northernmost California, Oregon, and Washington also occurred between 1964 and 1967, but evidence of significant economically recoverable quantities of petroleum was not encountered. Potential reservoirs in this part are primarily upper Cenozoic sandstone of low reservoir quality.

Region 6A, Gulf of Mexico Offshore

The Gulf of Mexico OCS separates naturally into two geological provinces: a Cenozoic province occupying the western two-thirds of the Gulf of Mexico, in which the producing horizons range in age from Oligocene to Pleistocene, and a Mesozoic province occupying roughly the eastern one-third of the Gulf of Mexico, in which production is largely concentrated in the Jurassic strata. Of these two provinces the Cenozoic has the highest potential for significant undiscovered oil and gas resources by a considerable margin. Future exploration and development activities are expected to focus on the continental slope, an area that includes the promising Flexure Trend.

Region 9A, Atlantic Coast Offshore

A thick, relatively undeformed, progradational wedge of Mesozoic and Cenozoic sedimentary deposits characterizes the Atlantic OCS. These deposits overlie lower Mesozoic and younger sedimentary rocks deposited in a series of elongate rift valleys that resulted from the opening of the Atlantic Ocean. The comparatively low heat flow of the region, combined with the inferred lack of numerous petroleum migration pathways through faults and folds, limits potential to the deeper Mesozoic rocks in thicker areas of deposition, mostly far from shore.

Forty-nine exploratory wells and five stratigraphic test wells have been drilled since exploration began off the Florida Keys in 1959. No commercial accumulations of hydrocarbons have been found, but a substantial show of noncommercial natural gas was encountered in the Baltimore Canyon province of the mid-Atlantic area. Some industry exploration may occur on current leases in the Carolina Trough province of the South Atlantic, where thick salt beds, similar to those of the productive Gulf of Mexico, may be present.

DATA BASE

The development of estimates for the undiscovered oil and natural gas resources for this assessment required the compilation and analysis of geologic, geophysical, engineering, and economic data from published and private sources throughout Government and industry. Descriptions of the data used by the USGS and MMS for their respective assessments are given below.

Onshore Regions and State Waters

Analyses of the onshore and State offshore provinces by the USGS were based on nonproprietary data that either are published, available from commercial sources, or available from USGS studies in progress.

Province geologists used data from previous assessments, published data (particularly from State geological surveys), and interpretations of geological, geochemical, and geophysical data from all pertinent sources to develop the oil and gas play framework for the assessments. Open-file reports, now being prepared by the province geologists for each assessment area, describe (1) the petroleum geology of the basins or provinces and (2) the geology of the oil and gas plays.

Computerized drilling and completion data from more than 1.8 million oil and gas exploratory and development wells came from the Well History Control System (Petroleum Information Corporation, 1986b). These data were incorporated into exploration and development maps that show exploratory penetrations and the areal size of oil and gas pools in a play. In addition, annual and cumulative drilling statistics were developed from this data base. For the majority of the basins assessed, the December 1985 version of the Well History Control System (WHCS) was available. For many of the provinces assessed, the system contained essentially all wells drilled. However, in some provinces, such as parts of the Eastern Interior Region and California, much of the historical record is missing.

Computerized oil and gas field data were available in both the Petroleum Data System (Petroleum Information Corporation, 1986a) and the Significant Oil and Gas Fields of the United States file (NRG Associates, Inc., 1986). Estimated reserves plus cumulative production (known recovery) for fields greater than 1 million BOE were taken from the Significant Oil and Gas Fields file. Published sources, particularly State data, were used for missing fields, primarily for fields in Oklahoma, and to supplement and verify data in the NRG file. Data for sizes of fields in the Appalachian basin were not available. Size and numbers data for fields smaller than 1 million BOE were developed from the National Production System (Petroleum Information Corporation, 1987). Fields in which the known recoveries of gas to oil exceed 20 MCF per barrel were classified as gas fields. All other fields were classified as oil fields having associated and dissolved gas.

Federal Offshore Regions

The MMS resource estimates were generally based upon data from industry exploration and development operations performed under permits or mineral leases issued for the offshore (OCS) areas of the United States. Since 1954, nearly 9,500 permits have been issued for conducting geophysical or geological studies in the Federal offshore. Additionally, more than 9,000 leases have been issued to private companies for exploration, development, and production of oil and natural gas from the Federal offshore. These permits and leases have resulted in approximately 4 million miles of common depth point (CDP) seismic data and more than 25,000 wells. The MMS has acquired more than 1 million miles of these CDP data and has extensive geological information, including well logs, from offshore wells. This data base was used to identify and map specific prospects within offshore petroleum plays as well as to determine important parameters for the geological and engineering factors that may be associated with these prospects. These data were also used to represent potential prospects that were not identifiable through seismic interpretation or prospects whose size prevented identification because of data gaps or mapping techniques.

In cases where insufficient data were available, data from geologically similar provinces from onshore United States and abroad were used in the assessment. These analogs were identified and developed by MMS experts, and pertinent data were derived from information contained in commercial data bases of oil and natural gas fields maintained on a national and worldwide basis. Data also were obtained from similar petroleum plays in the onshore or State waters through consultation and coordination with USGS resource assessment personnel, particularly in cases where geologic provinces and potential petroleum plays extended across the boundaries of the Agencies' assessments.

ECONOMIC PARAMETERS

The estimates of the undiscovered economically recoverable oil and gas resources were computed by first developing minimum economic field size cutoffs (an estimate of the smallest field that could be developed and have a positive private economic value) and then applying the cutoffs to the field size populations of assessed undiscovered resources thought to be recoverable by conventional production methods. Standard discounted cash-flow analysis was applied in the calculation of minimum economic field sizes, requiring assumptions pertaining to future oil and gas prices, inflation rates, prevailing rates of return and field development costs, infrastructure, and timing. Economic assumptions used in this analysis were developed during the autumn of 1986. In recognition of the uncertainties associated with such assumptions and the different methodologies used by the USGS and MMS in the assessment, the economic parameters were specified in terms of a range of possible outcomes.

During late 1986, the Organization of Petroleum Exporting Countries (OPEC) was attempting to maintain a listed price of $18 per barrel. At about that time, three independent forecasting groups, Data Resources, Inc. (1986), Chase Econometric Associates, Inc. (1986), and the Energy Information Administration of the U.S. Department of Energy (1987b), all forecasted oil price levels of $15 to $20 per barrel from 1987 through 1989. Accordingly, future oil and gas prices were projected by use of initial landed prices of $18 per barrel. Moreover, because of the surplus in natural gas during the mid-1980's, its acquisition price had fallen to about 56 percent of the BTU-equivalent price of oil, so the assumed starting gas price was set at $1.80 per MCF.

Given these starting prices, the assumed growth rates of real oil and gas prices were generated from a restricted range of possible values. During the initial period, from 1987 through 1989, the midpoint growth rate of −3 percent in real oil prices was projected. That is, real oil prices were expected to decline by 3 percent per year. This decline would occur if, for example, the nominal oil prices were stable but the general price level increased by 3 percent per year, as predicted by Data Resources. The midpoint gas price forecast projected a 2 percent per year decline. To allow for uncertainty, the range of price growth rates used in the minimum field size calculations was bounded plus or minus 1 percentage point around the midpoint forecast.

Starting in 1990, greater world demand for oil owing to lower prices, as well as lower oil production from non-OPEC nations, would be expected to result in less OPEC excess capacity, putting upward pressure on oil prices. Therefore, the projected midpoint real oil price growth rate for 1990 and later was set at 4 percent per year. (As the annual inflation rate during this period was set at 6 percent, nominal oil price growth was projected to be about 10 percent per year.) This scenario is equivalent to the projection of Chase Econometrics and slightly below the 6 percent real oil price growth rate estimated by both the Energy Information Administration and Data Resources.

After 1989, the midpoint of the real gas price growth rate was projected to be 5.5 percent. Once again, the oil and gas price growth rates used in the minimum field size calculations were bounded plus or minus 1 percentage point around the midpoint forecast, so a range of real price growth of 3 to 5 percent for oil and 4.5 to 6.5 percent for gas resulted. Envelopes representing projected price levels were computed by use of maximum and minimum real price paths and are shown in figure 8 for oil and in figure 9 for

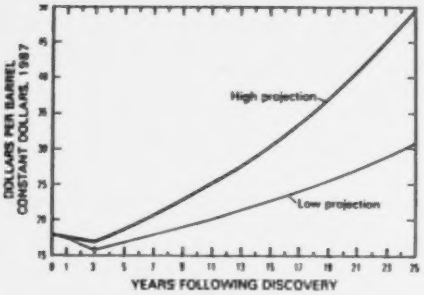


Figure 8. Oil price envelope showing the range of possible price paths. Prices expressed in constant 1987 dollars.

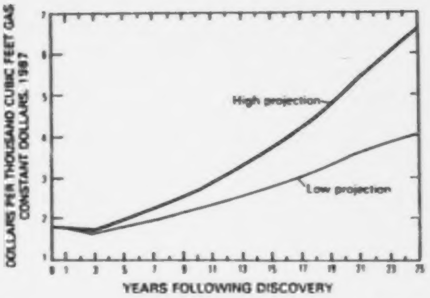


Figure 9. Gas price envelope showing the range of possible price paths. Prices expressed in constant 1987 dollars.

natural gas. For consistency with the historical valuation of gas relative to oil, the absolute price of gas was constrained to be no more than 75 percent of the BTU-equivalent price of oil.

The required rates of return that were used in the cash-flow analysis were assumed to reflect the opportunity cost of capital. An after-tax required return of 8 percent plus or minus 2 percentage points was used. This assumption is consistent with the findings in a number of empirical studies that estimated after-tax returns on OCS leases (see Mead and others, 1980a,b, 1983).

The choice of minimum oil and gas field sizes for specific onshore and State water provinces or Federal offshore prospects was based upon assessed field characteristics and economic assumptions. In the Federal offshore these included parameters affecting costs and rates of production as well as stochastic economic parameters (water depth, estimated porosity, price and rate of return scenarios). For onshore and State waters, the parameters included province location, estimated field depth, and a single price and rate of return scenario within the ranges described above.

The future costs to be incurred by development activities and transportation facilities were based upon costs reported during the 1985–86 period. For the purposes of this assessment, such costs were assumed to remain relatively stable for future activities when viewed in terms of constant (noninflated) dollars. Assumptions about the timing of development activities and the transportation costs were developed specifically for each geologic province on the basis of past experience and current conditions pertaining to each province. Exploration costs were not considered. However, in the exploration process, fields are discovered that cannot support both exploration and development costs, yet some of these fields can be profitably developed, once discovered, and hence add resources to the national reserves. Leasehold and exploration costs, as well as field delineation costs that are incurred prior to the field development decision, were assumed to be sunk and were not used in the discounted cash-flow calculations to determine whether a field was commercially developable.

The economic assumptions and projections used in this assessment to determine minimum commercially developable field sizes are predicated upon a 1987 field discovery and development decision. Furthermore, the field development process is assumed also to have started in 1987. The minimum economic field size (MEFS) represents the smallest field, given the economic conditions postulated here, that would yield a net average after-tax return of 8 percent on the investment required to develop and produce it.

The individual resource assessment methodologies and data bases used by the USGS and the MMS required individual but compatible determinations of MEFS.

METHODS OF ASSESSMENT

The assessments of the undiscovered recoverable oil and gas in each province were based upon review and analysis of each province's petroleum geology and exploration history that incorporated new geologic and geophysical information, several major computer data bases, and more definitive methods of resource appraisal than used in earlier assessments.

The Onshore and State Waters Assessment

The onshore and the coastal State water assessment prepared by the USGS covered 80 petroleum provinces. In these areas, a play-analysis method was employed for accumulations greater than 1 million barrels of oil (MMBO) or 6 BCF of gas. Risk was assigned to the geologic factors controlling the occurrence of oil or gas, and the size and number of the undiscovered accumulations were estimated.

In the play-analysis method, geologic settings of oil and gas occurrence are modeled. The play is treated as a collection of accumulations conceived as having similar geologic risks and sharing common geologic elements, such as known or suspected trapping conditions, which may be structural, stratigraphic, or a combination of the two. Geologists make judgments as to the probability of occurrence of the geologic factors necessary for the formation of oil or gas accumulations and quantitatively assess accumulation sizes and numbers as probability distributions. The computer package FASPF (Fast Appraisal System for Petroleum-Field Size) then performs the resource calculations on the basis of this information, employing an analytical method based on probability theory, rather than using Monte Carlo simulation (Crovelli, 1987). This arrangement employs the geologist's expertise with geologic factors and the computer's facility in manipulation of numbers within the appraisal model. The method provides for a systematic integration and analysis of the geologic factors essential for the occurrence of oil and gas, a thorough documentation of the analysis, and an assessment containing information on the size, depth distribution and number of hydrocarbon accumulations, and quantity of estimated resources. In this assessment, 250 plays covering the onshore and State offshore areas were identified, and for each play, undiscovered oil and gas resources were estimated. In developing input for the assessment model, several data display and analytical techniques were used. Exploration and development maps were made from the WHCS drilling data base, which showed the dry hole penetrations and the areal boundaries and sizes of oil and gas pools in each play. For most areas these data were plotted by quarter-mile grid cells and thus clearly delineated explored versus unexplored regions of each basin, as well as productive and nonproductive regions. Used in conjunction with geologic maps of the basins showing the structures and stratigraphy relevant to each play, these penetration maps gave the estimators a perception of how much truly prospective area and volume was left to be explored in the play and a perception as to the physical size of the largest field that could conceivably remain to be found in each play.

As a tool to guide the analysis of field-size distributions, we adopted the fitting of a truncated shifted Pareto distribution (shifted to have its origin at 1 million BOE (MMBOE) and truncated by the size of the largest field) to the sizes of the known oil and gas fields in each play. The theory and application of this distribution to the analysis of field sizes is documented by Houghton (1988). The choice of this distribution was based on the fact that it had the requisite J-shape, that it was mathematically simple and tractable, and that it did not have some of the mathematical drawbacks of the more often used log-normal distribution. Essentially, the truncated shifted Pareto could be fitted easily to any sufficiently numerous set of field sizes, and over their range its parameters would quantify both the shape and size of the observed distribution, whether the observed distribution consisted of many small fields of roughly similar size (dispersed habitat) or a more complete range of fields in which the bulk of the contained resource was concentrated in a few of the largest fields (concentrated habitat). Both polar situations, and the full gamut in between, occur in the 250 plays assessed.

For the purposes of guiding the estimators, a truncated shifted Pareto was fitted to the entire set of known fields in each play, and in chronological order of discovery to the first third discovered, to the middle third, and to the last third. This procedure has the advantage of showing in a cogent way, in conjunction with the dates of completion of each third, the discovery history of the play versus field size. Typically, the larger fields in a play are discovered early during the exploration of a play area, with successive discoveries, in general, becoming progressively smaller. By fitting the distribution by chronological segments, the rate of falloff of returns to exploratory effort can be observed. This factor, taken in conjunction with the drilling analysis, is a significant input to prognostication of numbers of undiscovered accumulations in a play. Finally, ratios of associated-dissolved gas to oil and NGL to gas were estimated from historical production data. All of these approximations were used to calculate the probabilistic estimates of oil, gas, and NGL's in accumulations having recoveries equal to or greater than 1 MMBO or 6 BCF of gas.

Probabilistic estimates of recoverable oil and gas in accumulations smaller than these cutoffs were made separately. These estimates were based primarily on log-geometric extrapolations of numbers of fields into field-size classes smaller than the play-analysis cutoffs. Estimates of undiscovered resources for these small fields were made for each province as a whole, rather than by play, and were done in two stages. First, a statistical estimate of the expected discovered plus undiscovered quantity of petroleum in the small fields was made under the assumption that the ratio of the total number of fields (discovered plus undiscovered) in consecutive size classes was the same for any pair of successive size classes (USGS and MMS, 1988, p. 73–80). In view of the above results, a probabilistic range of the undiscovered quantities of oil and gas in small fields was then estimated by expert judgment. These probabilistic estimates were based upon the petroleum geology of the province as well as the density of exploratory drilling and the number of small fields already discovered. The resultant mean estimate of undiscovered resources was then allocated to field-size classes needed for the economic analysis. The final small field-size distributions for undiscovered accumulations were determined for each province by two parameters: the number of fields in the smallest field-size class and the ratio of numbers of fields in successive classes. These two parameters were determined to satisfy two conditions. The first condition was that the quantity of petroleum in undiscovered small fields equaled the mean previously estimated by expert judgment. The second condition was that the number of fields in large field-size classes (>1 MMBO and 6 BCF of gas) was as close as possible to the number already discovered plus the mean number estimated to be undiscovered.

The economic analysis was performed by use of field and depth distributions estimated in the play analysis and from the small-field assessment.

The estimates for both undiscovered recoverable and economically recoverable resources in each of the 250 onshore and State offshore plays were aggregated by use of probability theory to produce the estimates of total undiscovered resources for the onshore provinces and regions. The same procedure was used to aggregate the onshore and offshore regions to produce estimates for the United States as a whole.

The Federal Offshore Assessment

The MMS resource estimates for the Federal offshore provinces are generally based upon data from industry exploratory and development operations performed under permits or mineral leases issued for the Federal offshore areas of the United States. These data were used by the MMS to identify and map specific prospects within offshore petroleum plays, as well as to determine important parameters for the geologic and engineering factors that may be associated with these prospects. These data also were used for representing potential plays or prospects that are not identifiable through seismic interpretation or prospects whose sizes may be masked by data gaps or mapping techniques.

The MMS developed estimates of undiscovered economically recoverable oil and gas resources by employing a computer mathematical simulation model termed PRESTO (Probabilistic Resource ESTimates-Offshore). This model performs multiple simulations of industry exploratory drilling efforts for these potential prospects and ranks possible outcomes of such efforts, which prove economically successful in terms of resources "discovered" and probabilities of occurrence (USGS and MMS, 1988).

For estimates of the undiscovered recoverable resources, the MMS modified the data base to eliminate the economic constraints imposed upon potential resource "discoveries" and used statistical techniques to extrapolate the size and number of all potential fields within the areas being modeled. For this assessment, MMS defined this category of resources to include potential fields of 1 MMBOE or larger (USGS and MMS, 1988).

Reporting and Calculation Procedures

Both the USGS and the MMS methods provide estimates of resources as a range of values corresponding to probabilities of occurrence in order to express the inherent uncertainty involved in assessment of unknowns. The resulting cumulative probability distributions represent the quantity of undiscovered resources. From these distributions, the low (F_{95}), the high (F_5), and the mean estimates are obtained. To arrive at the estimated quantity of undiscovered resources for larger areas, such as provinces, regions, or the Nation, distributions for the basic assessment units were progressively aggregated, with geologic dependency incorporated at each level. For the onshore and State water assessments, the plays within provinces were considered to be fully dependent. For the aggregation of provinces into regions, the provinces within each region were assigned a 50-percent dependency. In the aggregation of regions, all regions, both onshore and offshore, were considered to be completely independent.

RESULTS

The assessed undiscovered *recoverable* conventional oil and gas resources for the United States are estimated to range from 33 to 70 BBO and from 307 to 507 TCF of gas, corresponding to the 95-percent and 5-percent probability levels, respectively (table 2). Corresponding estimates for NGL are 6 to 12 BB. The assessed undiscovered *economically recoverable* oil and gas resources for the United States are estimated to range from 21 to 54 BBO and from 208 to 326 TCF of gas, corresponding to the 95-percent and 5-percent probability levels, respectively (table 2). Corresponding estimates for NGL are 5 to 8 BB.

Figures 10 and 11 show the estimated cumulative probability distributions of undiscovered recoverable resources for crude oil and natural gas; also shown at the same scale are the discovered volumes (cumulative production and reserves). Measured (proved) reserves at the time of the assessment were 29.5 BBO and 206.6 TCF of natural gas. On the basis of mean values, undiscovered recoverable resources of crude oil are assessed to be about 67 percent larger than measured reserves; undiscovered resources of natural gas are assessed to be 93 percent larger than measured reserves. Further, it is estimated that an additional 22 BBO (indicated and inferred reserves) and 99 TCF of gas (inferred reserves) will be added to reserves through growth of known fields.

Figures 12 and 13 illustrate, by use of mean values, the distribution, both onshore and offshore (Federal and State waters), of the estimated undiscovered recoverable resources between the lower 48 States and Alaska for crude oil and for natural gas, respectively. As shown on those figures, 34 percent of the estimated undiscovered recover-

Table 2. Conventional oil and natural gas resources by region

[Oil in billion barrels; gas in trillion cubic feet; natural gas liquids (NGL) in billion barrels. NGL shown only in totals. *, indicated reserves are includedwith measured reserves estimated by the Minerals Management Service. +, not known. Mean value totals may not be equal to the sums of the constituent means because numbers have been independently rounded. Fractile values (F_{95}, F_5) are not additive. Gas includes both nonassociated and associated-dissolved gas. F_{95} represents a 19 in 20 chance and F_5 represents a 1 in 20 chance of the occurrence of at least the amount tabulated]

Produced resources			Reserves		Undiscovered recoverable resources			Undiscovered economically recoverable resources		
Region		(Cumulative production)	Measured	Inferred and indicated	F_{95}	Mean	F_5	F_{95}	Mean	F_5
Onshore and State waters										
1	Oil	6.1	6.9	6.4	3.6	13.2	31.3	1.1	7.9	23.8
	Gas	3.8	32.7	3.0	15.6	57.9	138.6	0.2	1.2	3.7
2	Oil	20.3	4.7	1.2	1.5	3.5	6.6	1.4	3.4	6.5
	Gas	33.2	3.9	2.6	5.5	11.0	19.1	5.1	10.6	18.8
3	Oil	3.1	.6	.4	.5	1.5	3.4	.4	1.5	3.3
	Gas	24.7	17.1	4.9	9.6	21.3	39.3	9.4	21.0	38.9
4	Oil	7.1	1.2	1.3	2.7	4.5	6.9	2.2	3.8	6.0
	Gas	13.1	7.6	3.6	7.0	15.2	27.8	6.2	14.2	26.5
5	Oil	30.2	5.4	3.8	1.5	2.6	4.0	1.4	2.4	3.8
	Gas	82.2	16.7	12.9	11.9	20.1	31.3	11.2	19.3	30.3
6	Oil	43.1	3.7	5.7	2.4	4.2	6.7	2.2	4.0	6.5
	Gas	285.6	33.6	42.3	51.2	82.5	123.6	47.7	79.3	121.6
7	Oil	17.3	1.1	1.4	1.2	1.9	2.7	1.1	1.7	2.5
	Gas	145.4	37.5	18.3	16.2	28.7	46.0	15.0	26.8	43.1
8	Oil	8.4	.5	.7	1.3	1.8	2.4	1.3	1.8	2.4
	Gas	33.9	8.2	5.0	10.8	17.2	25.7	10.1	16.3	24.5
9	Oil	.1	< .1	< .1	.1	.2	.5	.1	.2	.5
	Gas	< .1	< .1	< .1	< .1	< .1	< .1	0.0	< .1	< .1
Total onshore and State waters										
	Oil	135.6	24.2	21.1	19.6	33.3	51.9	13.9	26.6	45.0
	Gas	622.0	157.4	92.7	178.7	254.0	346.7	145.6	188.7	239.1
	NGL	+	+	3.8	5.0	6.8	9.0	4.0	5.5	7.4
Federal Offshore										
1A	Oil	0.0	0.0	0.0	.6	3.4	9.4	0.0	.9	4.8
	Gas	0.0	0.0	0.0	4.7	16.8	39.4	0.0	0.0	0.0
2A	Oil	.4	1.3	.2*	.9	3.4	8.3	.4	2.0	5.5
	Gas	.3	2.1	.3*	3.5	8.0	15.1	1.8	5.2	11.0
6A	Oil	6.9	4.0	.4*	4.9	8.6	13.6	2.6	5.0	8.6
	Gas	75.2	47.0	5.8*	63.0	103.3	156.9	36.0	64.3	103.7
9A	Oil	0.0	0.0	0.0	.1	.7	2.3	0.0	.2	.8
	Gas	0.0	0.0	0.0	6.8	17.0	33.7	0.0	4.5	9.8
Total Federal offshore										
	Oil	7.3	5.3	.6*	9.2	16.1	25.6	4.0	8.2	14.3
	Gas	75.5	49.2	6.1*	97.8	145.1	204.8	44.3	74.0	113.8
	NGL	+	+	.2	.6	1.8	3.8	.2	.8	1.8
Total United States										
	Oil	142.9	29.5	21.7	33.2	49.4	69.9	20.7	34.8	53.8
	Gas	697.5	206.6	98.8	306.8	399.1	507.2	208.2	262.7	325.5
	NGL	24.4	8.2	4.0	6.1	8.6	11.5	4.6	6.3	8.4

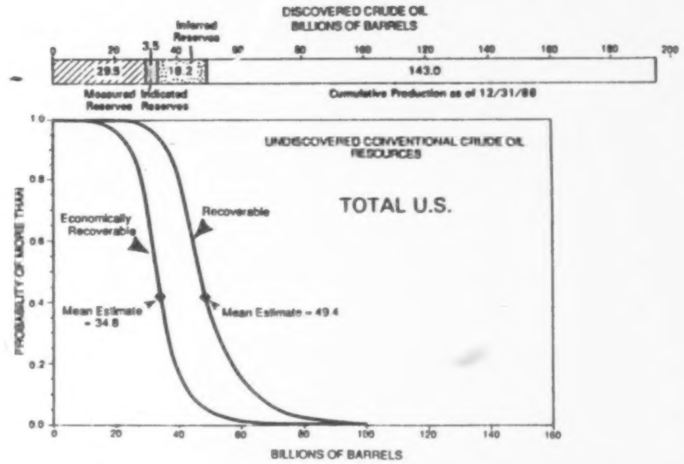


Figure 10. Discovered crude oil and cumulative probability distributions for undiscovered recoverable and undiscovered economically recoverable conventional crude oil resources of the United States.

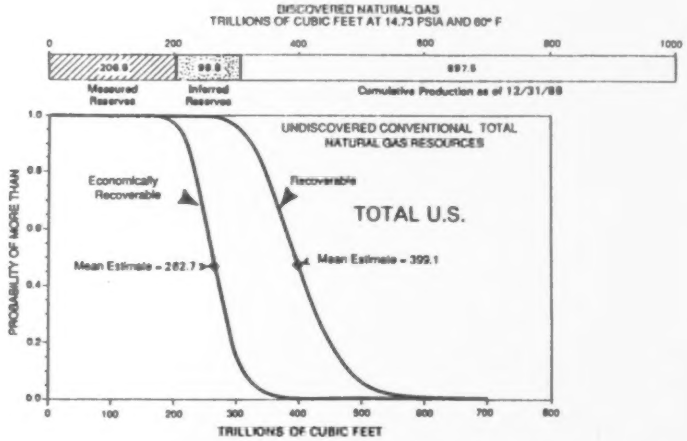


Figure 11. Discovered natural gas and cumulative probability distributions for undiscovered recoverable and undiscovered economically recoverable conventional natural gas resources of the United States.

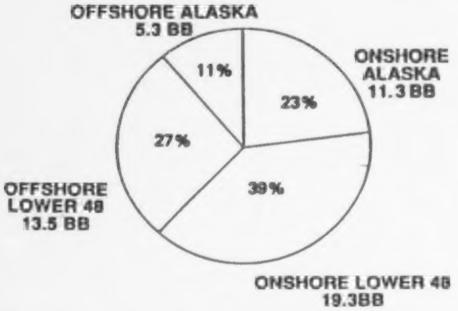


Figure 12. Distribution of undiscovered recoverable conventional crude oil resources based on mean estimates. Offshore estimates here include both Federal and State waters. Units in billions of barrels.

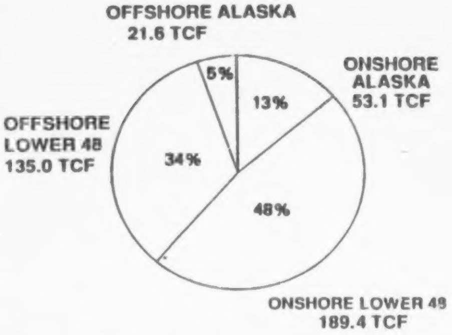


Figure 13. Distribution of undiscovered recoverable conventional total natural gas resources based on mean estimates. Offshore estimates here include both Federal and State waters. Units in trillions of cubic feet.

able crude oil resources and 18 percent of the assessed undiscovered recoverable natural gas resources occur in Alaska. Approximately 62 percent of the estimated undiscovered recoverable crude oil resources and 61 percent of the estimated undiscovered recoverable natural gas resources are onshore.

As reported in table 2, the estimates of economically recoverable resources approach recoverable quanities in all areas except Alaska and the offshore, where large accumulations are required for economic development. Considering the mean values, 70 percent of the estimated undiscovered recoverable crude oil and 66 percent of the natural gas overall are estimated to be economically recoverable for the United States. The major areas where the estimates are significantly constrained by economics are in Alaska and, to a lesser extent, the offshore areas of the lower 48 States (figs. 14 and 15). Practically none of the undiscovered gas resources in Alaska are classified as economically recoverable, primarily because of remoteness from markets and lack of transportation facilities. Pipelines may eventually be constructed to transport natural gas from northern Alaska or the gas may be used in the thermal recovery of heavy oil resources known to exist there.

The assessment of the United States undiscovered recoverable petroleum potential, for essentially the same resource categories, is decreased from that estimated in 1980 (Dolton and others, 1981) as shown in table 3.

Much of the overall decline in estimates of undiscovered resources, both onshore and offshore, is due to reevaluations reflecting new geological data from exploration drilling in several major regions expected to have petroleum potential. The expected major discoveries were not forthcoming in the frontier exploration areas of Alaska and Atlantic offshore nor in the overthrust belt of the Western United States. Moreover, most other onshore regions did not meet expectations of resource occurrence that were postulated earlier, although in a few areas estimates have increased. The massive exploration effort of industry of the late 1970's and early 1980's simply did not confirm some of the geological expectations for large new accumulations included in the earlier estimates. Furthermore, almost every onshore play having sufficient data showed a decline in sizes of fields discovered over the history of the play. An example of this field-size decline is shown in figure 16.

Change in the estimates also result from different assumptions, methods, and data that were used in the two studies. Circular 860 assessors employed a direct assessment technique to estimate undiscovered resources at a province level, whereas in this study assessors employed a play-level analysis. The methods used in this study had more specific and detailed data requirements. In the Federal offshore, detailed proprietary seismic data were used in the analysis of prospects, whereas in Circular 860, broadly spaced regional seismic data supported province estimates. For the onshore assessments in this study, the play-analysis approach required more direct use of exploratory drilling data and field-size data from known fields. Field data that were available for this study were not available for the Circular 860 analysis.

Important differences in assumptions about future prices of commodities and technology changes also certainly influenced the results of the two studies. When the 1980 estimates were made, world oil prices exceeded $30 per barrel and were increasing rapidly. At the time of this study, world oil prices were about $18 per barrel. Circular 860 assessors considered continued development and application of new technology but did not specify what recovery

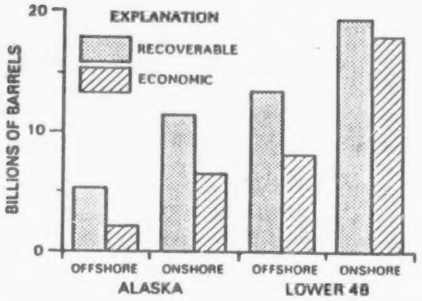


Figure 14. Comparison of mean estimates of undiscovered recoverable oil resources and undiscovered economically recoverable oil resources for Alaska and the lower 48 States.

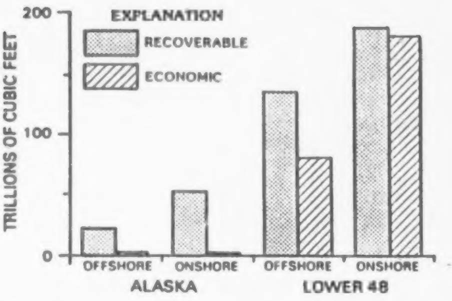


Figure 15. Comparison of mean estimates of undiscovered recoverable natural gas resources and undiscovered economically recoverable natural gas resources for Alaska and the lower 48 States.

Table 3. Comparison of 1981 and 1987 estimates of total conventional oil and gas resources for the onshore and offshore United States

[Figures in billions of barrels of oil and trillions of cubic feet of gas. Gas includes both nonassociated and associated-dissolved gas]

	Assessment year	Cumulative production	Identified resources[1]	Undiscovered recoverable (mean estimate)	Total
Oil					
Circular 860 (1981)	1980	120.7	54.8	82.6	258.1
This study	1987	143.0	51.2		
Recoverable				49.4	243.6
Economically recoverable				34.8	229.0
Gas					
Circular 860 (1981)	1980	578.0	369.0	593.8	1,540.8
This study	1987	697.5	305.4		
Recoverable				399.1	1,402.0
Economically recoverable				262.7	1,265.6

[1] Identified resources are the sum of measured, indicated and inferred reserves. Adjustment to measured and inferred reserves between 1980 and this study occurred because a different growth function was used to calculate inferred reserves and reserve estimates came from different sources.

efficiencies might be expected in the future. This study, on the other hand, was based on current recovery efficiency. The intent of this study was not to deny the importance of those kinds of changes but to present estimates that reflect current production practices. Should improvements occur in recovery efficiencies from conventional reservoirs, exceeding historical growth, additional volumes of oil and gas would accrue to the undiscovered recoverable resources estimated in this study.

Another factor affecting the comparison of these estimates of undiscovered resources is the interim discovery of oil and gas. A rough estimate of the oil and gas discovered in 1980 through 1986, including projected growth of these new discoveries, is 6 to 8 BBO and 60 to 70 TCF of gas. These new discoveries cause a shift of resources from the undiscovered to the identified or discovered category.

With respect to the MMS assessment of 1984 (Cooke, 1985), the estimates for the undiscovered *economically recoverable* oil resources for the Federal offshore area are compared in table 4. The 1984 assessment by MMS did not present estimates for undiscovered recoverable resources but presented estimates only for the undiscovered economically recoverable resources.

Comparison of the estimates presented here with estimates from other sources reveals a general concurrence about the magnitude of undiscovered conventional recoverable resources for the United States (figs. 17 and 18). A

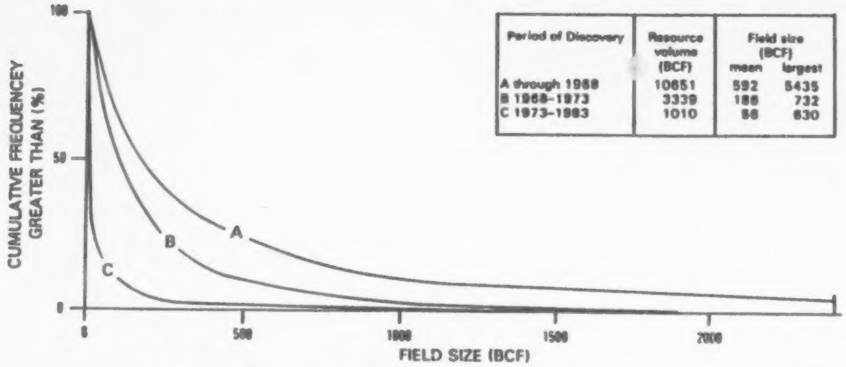


Figure 16. An example of the change in size of fields discovered through time in the Lower Paleozoic gas play, Permian basin, Texas and New Mexico. Field size in billions of cubic feet of gas (BCF). Data are for fields greater than 6 BCF. Curve A, cumulative field-size distribution, discoveries through 1968; Curve B, discoveries 1968–73; Curve C, discoveries 1973–83.

significant difference, however, exists between estimates presented here and the Potential Gas Committee's 1987 estimates shown on figure 18. As discussed by Fisher and others (1988), much of the difference can be explained by the fact that definitionally the Potential Gas Committee's (Potential Gas Committee, 1987) estimates include resources from low-permeability "tight" sandstones (Potential Gas Committee, 1983) and fractured shales; these were excluded from the estimates of conventional resources assessed in this study.

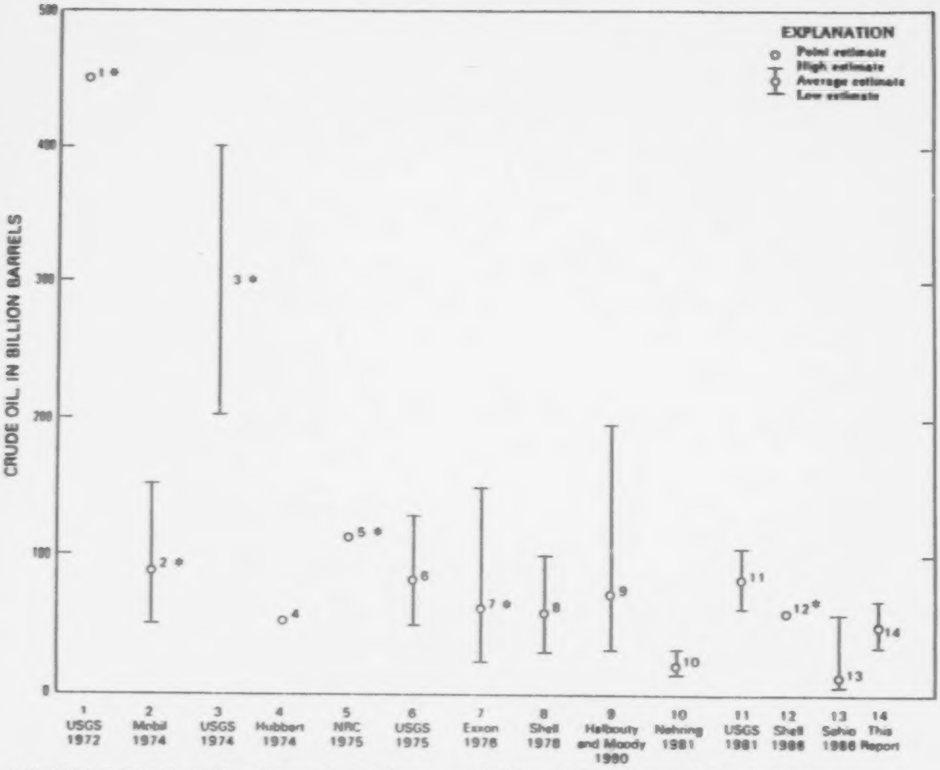
The regional distribution of conventional petroleum resources is shown by figures 19 and 20, depicting for oil and gas, respectively, undiscovered recoverable quantities, reserves, and cumulative production. The exploration maturity of the onshore regions is obvious compared to the offshore. The relative importance of the Gulf Coast, the Gulf of Mexico, and Alaska for undiscovered recoverable gas and of Alaska and the Gulf of Mexico for undiscovered recoverable oil are also evident.

Figures 21 and 22 illustrate the cumulative probability curves for undiscovered oil and gas resources onshore and in State waters. Figures 23 and 24 display similar cumulative curves for the Federal offshore undiscovered oil and gas resources. Comparison of the curves for undiscovered economically recoverable resources and undiscovered recoverable resources on the same graph points out the effect of imposing economic constraints on the resources estimated. The percentage difference, or spread, between the estimates of undiscovered economically recoverable and undiscovered recoverable is greater for the offshore than onshore and reflects higher development costs and technological constraints associated with marine operations, particularly in deep water and harsh operating environments.

The onshore small fields (fields having less than 1 million BOE recoverable hydrocarbons) account for about 94 percent of the estimated number of undiscovered fields in the lower 48 States. Small fields based on mean values are expected to contain about 25 percent of the total undiscovered oil and about 13 percent of the total undiscovered gas. For the onshore lower 48 States, about 52 percent of the undiscovered small oil fields and 46 percent of the small gas fields were estimated to be commercially developable. None of the undiscovered small fields in the State offshore were estimated to be commercially developable. It is estimated that 73 percent of the total hydrocarbons in undiscovered small oil fields and 66 percent of the hydrocarbons in small undiscovered nonassociated gas fields were commercially developable. Exploration costs, which were not built into the economic analysis, would, nevertheless, control exploration for these small-field resources.

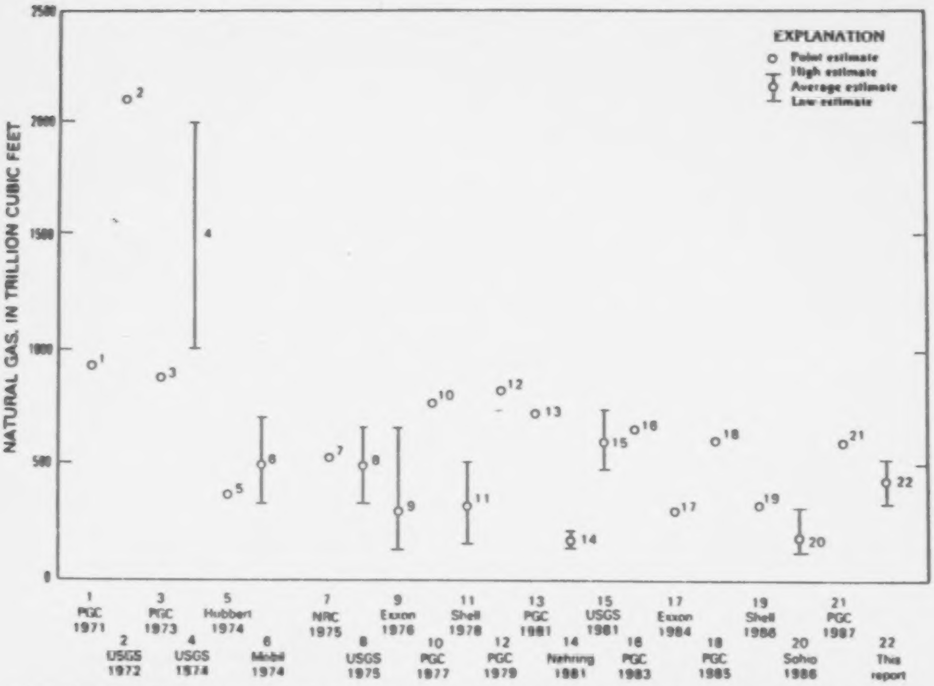
The highest concentrations of undiscovered small oil fields are in the Rocky Mountains and Northern Great Plains (Region 4) and in the Mid-Continent (Region 7), whereas the Gulf Coast (Region 6) and the Mid-Continent have the highest number of small gas fields. Because most of the fields assessed in the Eastern United States (Regions 8 and 9) are expected to be shallow, these regions contain the highest proportion of small fields that are expected to be commercially developable.

The estimated mean undiscovered recoverable oil resources are two-thirds larger than measured reserves, and



1. Theobald, P. K., Schweinfurth, S. P., and Duncan, D.C., 1972, Energy resources of the United States: U.S. Geological Survey Circular 650, 27 p.
2. Moody, J. D. (Mobil Oil Corporation), oral communication *reported in* Gillette, R., 1974, Oil and gas resources—did U S G S gush too high?: Science, v. 185, no. 4148, p. 127–130.
3. U.S. Geological Survey News Release, March 26, 1974.
4. Hubbert, M. K., 1974, U.S. energy resources, a review as of 1972, pt. 1, *in* A national fuels and energy policy study: U.S. 93rd Congress, 2d session, Senate Committee on Interior and Insular Affairs, Committee Print, Serial No. 93 – 40 (92 – 75), 267 p.
5. National Research Council, Committee on Natural Resources and the Environment (COMRATE), 1975, Mineral resources and the environment: National Academy of Sciences, 348 p.
6. Miller, B. M., Thomsen, H. L., Dolton, G. L., Coury, A. B., Hendricks, T. A., Lennartz, F. E., Powers, R. B., Sable, E. G., and Varnes, K. L., 1975, Geological estimates of undiscovered recoverable oil and gas resources in the United States: U.S. Geological Survey Circular 725, 78 p.
7. Exxon Company, U.S.A., Exploration department, 1976, U.S. oil and gas potential: Exxon Company, U.S.A., 10 p. (March 1976).
8. Oil and Gas Journal, 1978, Shell; Alaska holds 58 percent of future U.S. oil finds: Oil and Gas Journal, v. 76, no. 47, p. 214.
9. Halbouty, M. T., and Moody, J. D., 1980, World ultimate reserves of crude oil: 10th World Petroleum Congress, Bucharest, 1979, Proceedings, v. 2, p. 291–301.
10. Nehring, Richard, with van Driest, E. R., II, 1981, The discovery of significant oil and gas fields in the United States: The Rand Publication Series R-2654/1-USGS/DOE, 2 v., 236 p. (with appendix, v. 2, of 477 p.).
11. Dolton, G. L., Carlson, K. H., Charpentier, R. R., Coury, A. B., Crovelli, R. A., Frezon, S. E., Khan, A. S., Lister, J. H., McMullin, R. H., Pike, R. S., Powers, R. B., Scott, E. W., and Varnes, K. L., 1981, Estimates of undiscovered recoverable conventional resources of oil and gas in the United States: U.S. Geological Survey Circular 860, 87 p.
12. Rozendal, R. A., 1986, Conventional U.S. oil and gas remaining to be discovered: Estimates and methodology used by Shell Oil Company, *in* Rice, D. D., ed., Oil and gas assessment—methods and applications: American Association of Petroleum Geologists Studies in Geology No. 21, p. 151–158.
13. Lewis, C. J. (Sohio Petroleum Company), 1986, Are our oil and gas resource estimates realistic? *in* Rice, D. D., ed., Oil and gas assessment—methods and applications: American Association of Petroleum Geologists Studies in Geology No. 21, p. 195–202.
14. This report.

Figure 17. Comparison of selected estimates of undiscovered recoverable conventional oil resources for the United States. Estimates are not always directly comparable because of different areas and commodities assessed. Asterisk indicates estimates that include natural gas liquids.



1. Potential Gas Committee, 1971, Potential supply of natural gas in the United States (as of December 31, 1970): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 41 p.
2. Theobald, P. K., Schweinfurth, S. P., and Duncan, D. C., 1972, Energy resources of the United States: U. S. Geological Survey Circular 650, 27 p.
3. Potential Gas Committee, 1973, Potential supply of natural gas in the United States (as of December 31, 1972): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 48 p.
4. U.S. Geological Survey News Release, March 26, 1974.
5. Hubbert, M. K., 1974, U.S. energy resources, a review as of 1972, pt. 1, *in* A national fuels and energy policy study: U.S. 93rd Congress, 2d session, Senate Committee on Interior and Insular Affairs, Committee Print, Serial No. 93 – 40 (92 – 75), 267 p.
6. Moody, J. D. (Mobil Oil Corporation), oral communication *reported in* Gillette, R., 1974, Oil and gas resources — Did the USGS gush too high?: Science, v. 185, no. 4146, p. 127–130.
7. National Research Council, Committee on Natural Resources and the Environment (COMRATE), 1975, Mineral resources and the environment: National Academy of Sciences, 348 p.
8. Miller, B. M., Thomsen, H. L., Dolton, G. L., Coury, A. B., Hendricks, T. A., Lennartz, F. E., Powers, R. B., Sable, E. G., and Varnes, K. L., 1975, Geological estimates of undiscovered recoverable oil and gas resources in the United States: U.S. Geological Survey Circular 725, 78 p.
9. Exxon Company, U.S.A., Exploration department, 1976, U.S. oil and gas potential: Exxon Company, U.S.A., 10 p. (March 1976).
10. Potential Gas Committee, 1977, Potential supply of natural gas in the United States (as of December 31, 1976): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 45 p.
11. Oil and Gas Journal, 1978, Shell; Alaska holds 58 percent of future U.S. oil finds: Oil and Gas Journal, v. 76, no. 47, p. 214.
12. Potential Gas Committee, 1979, Potential supply of natural gas in the United States (as of December 31, 1978): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 75 p.
13. Potential Gas Committee, 1981, Potential supply of natural gas in the United States (as of December 31, 1980): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 119 p.
14. Nehring, Richard, with van Driest, E. R., II, 1981, The discovery of significant oil and gas fields in the United States: The Rand Publication Series R-2654/1-USGS/DOE, 2 v., 236 p. (with appendix, v. 2, of 477 p.).
15. Dolton, G. L., Carlson, K. H., Charpentier, R. R., Coury, A. B., Crovelli, R. A., Frezon, S. E., Khan, A. S., Lister, J. H., McMullin, R. H., Pike, R. S., Powers, R. B., Scott, E. W., and Varnes, K. L., 1981, Estimates of undiscovered recoverable conventional resources of oil and gas in the United States: U.S. Geological Survey Circular 860, 87 p.
16. Potential Gas Committee, 1983, Potential supply of natural gas in the United States (as of December 31, 1982): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 74 p.
17. Platt's Oilgram News, 1984, 300 tcf of undiscovered U.S. gas-Exxon: Platt's Oilgram News; v. 62, no. 82, p. 2. April 27, 1984.
18. Potential Gas Committee, 1985, Potential supply of natural gas in the United States (as of December 31, 1984): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 161 p.
19. Rozendal, R. A., 1986, Conventional U.S. oil and gas remaining to be discovered: Estimates and methodology used by Shell Oil Company, *in* Rice, D. D., ed., Oil and gas assessment—methods and applications: American Association of Petroleum Geologists Studies in Geology No. 21, p. 151–158.
20. Lewis, C. J., (Sohio Petroleum Company), 1986, Are our oil and gas resource estimates realistic?, *in* Rice, D. D., ed., Oil and gas assessment—methods and applications: American Association of Petroleum Geologists Studies in Geology No. 21, p. 195–202.
21. Potential Gas Committee, 1987, Potential supply of natural gas in the United States (as of December 31, 1986): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 160 p.
22. This report.

Figure 18. Comparison of selected estimates of undiscovered recoverable conventional natural gas resources for the United States. Estimates are not always directly comparable because of different areas and commodities assessed.

Table 4. Comparison of 1984 and 1987 estimates of total conventional oil and gas resources for the Federal offshore

[Figures in billions of barrels of oil and trillions of cubic feet of gas. Gas includes both nonassociated and associated-dissolved gas]

	Assessment year	Cumulative production	Identified resources	Undiscovered recoverable (mean estimate)	Total
Oil and liquids					
MMS 85-0012					
Economically recoverable (1985)	1984	6.2	4.6	12.2	23.0
This study	1987	7.3	5.9		
Recoverable				16.1	29.3
Economically recoverable				8.2	21.4
Gas					
MMS 85-0012					
Economically recoverable (1985)	1984	62.7	45.8	90.5	198.5
This study	1987	75.5	55.3		
Recoverable				145.1	275.9
Economically recoverable				74.0	204.8

measured reserves are about 10 times the 1987 annual domestic production rate. The potential for large accumulations is primarily in Alaska and in the Federal offshore areas, where long lead times are required for development and for delivery of commodities to market. In contrast, the large numbers of relatively small oil accumulations, which typify onshore areas of the lower 48 States, are readily accessible to markets. In consideration of this geographic distribution of oil resources and the discovery rates experienced over the last decade (approximately 1 BBO per year), it is likely that annual additions to oil reserves from discoveries of conventional resources will decline over the next decade at current reduced levels of exploratory drilling.

In the case of natural gas, the estimated mean undiscovered recoverable resources are nearly double the measured reserves, and measured reserves (excluding northern Alaskan reserves) are about 10 times the 1987 annual domestic production rate. The large estimated gas resources on the North Slope of Alaska are not economic, given the assumptions specified in this assessment. About 81 percent of the Nation's estimated undiscovered recoverable gas resources are located in the lower 48 States, both onshore and offshore, where they are accessible for exploration. Provided there are adequate incentives for gas exploration and development, the large measured and inferred reserves of natural gas and the assessed distribution of undiscovered recoverable gas resources suggest that the availability of gas resources should not limit our ability to sustain current gas production rates for several years.

In this study, unconventional resources of low-permeability "tight" gas-bearing sandstones and gas-bearing fractured shales, which are now largely identified occurrences, rather than being undiscovered, were separated geologically and excluded. Some conventional gas resources likely are embedded in these unconventional reservoir sequences, where geologic data were inadequate to permit their separation.

National-scale estimates of resources in low-permeability "tight" reservoirs have been published by the National Petroleum Council (1980), Potential Gas Committee (1983), and Fisher and others (1988). According to these and other studies, the United States has unconventional resources of gas that are estimated to be large in comparison to conventional resources. These resources include not only the "tight" and fracture reservoirs cited above, but also coal bed methane, gas hydrates, and other sources. Some gas is now produced from these sources. Improved economic incentives and new technologies could accelerate their development and influence long-term energy supply estimates.

CONCLUSION

The last Government assessment of the undiscovered recoverable conventional oil and gas resources for the United States was released in 1981. Since that time, many changes have occurred that affect the long-term energy picture. Updated estimates of the Nation's undiscovered oil and gas resources were needed for planning purposes.

In response to that need, two agencies of the Department of the Interior cooperated in a systematic assessment of conventional resources. More extensive data bases, knowledge from recent exploratory and development drilling, combined with more sophisticated computer and geologic modeling techniques, were used. Economic assumptions were made to estimate undiscovered resources that would be economic to produce, given those assumptions. To indicate long-term potential, additional estimates were made without economic constraints but assuming conventional recovery techniques.

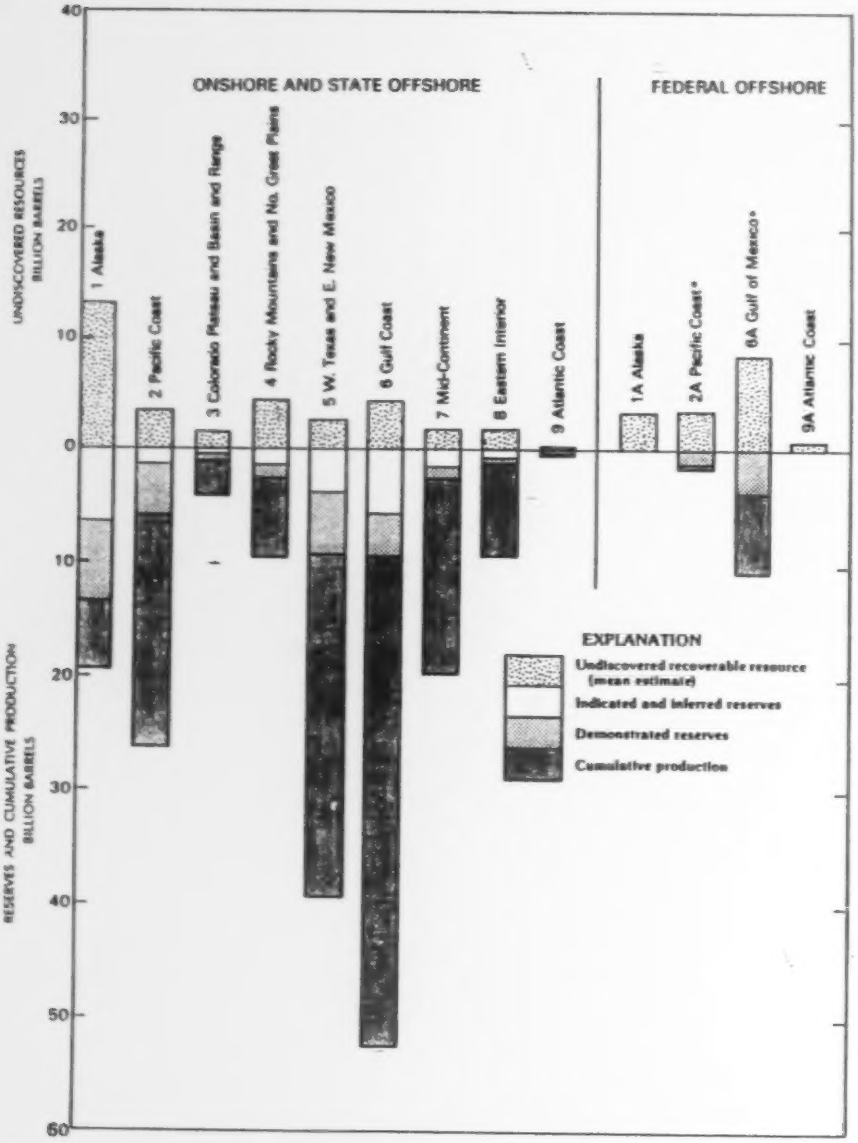


Figure 19. Estimates of discovered amounts (cumulative production and reserves) and undiscovered recoverable amounts (mean estimates) of crude oil in billions of barrels by region. Asterisk indicates that demonstrated, indicated, and inferred reserves are combined.

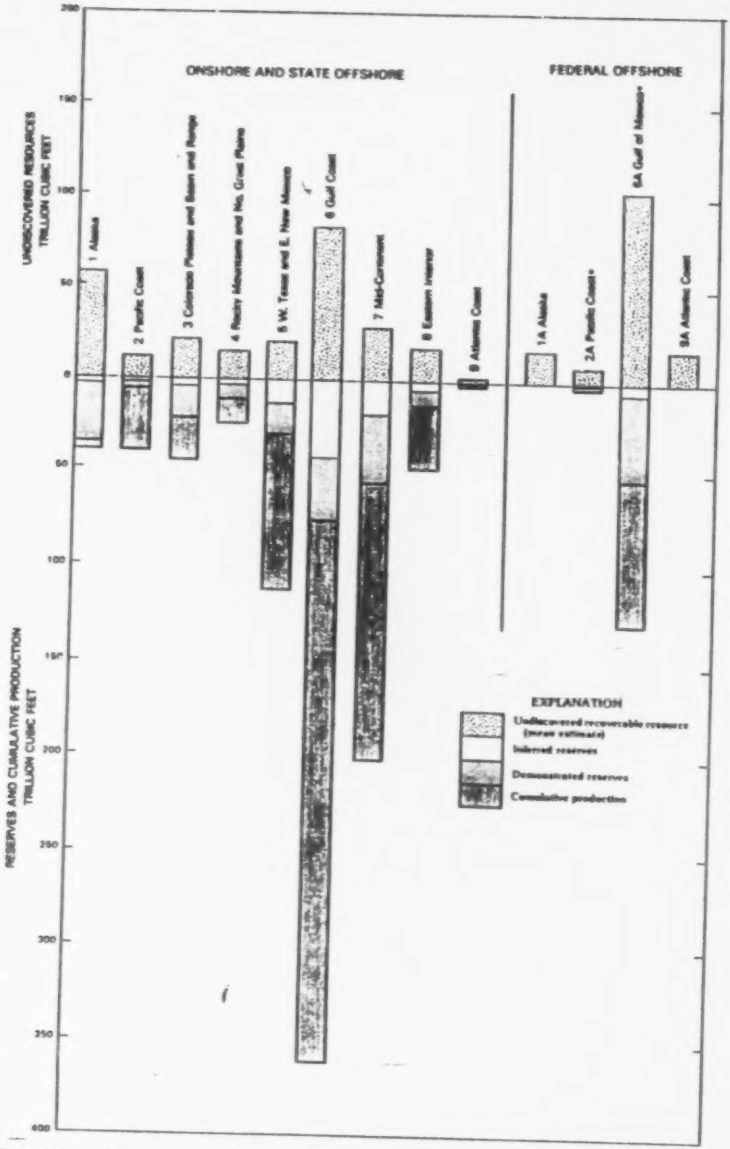


Figure 20. Estimates of discovered amounts (cumulative production and reserves) and undiscovered recoverable amounts (mean estimates) of natural gas in trillions of cubic feet by region. Asterisk indicates that demonstrated and inferred reserves are combined.

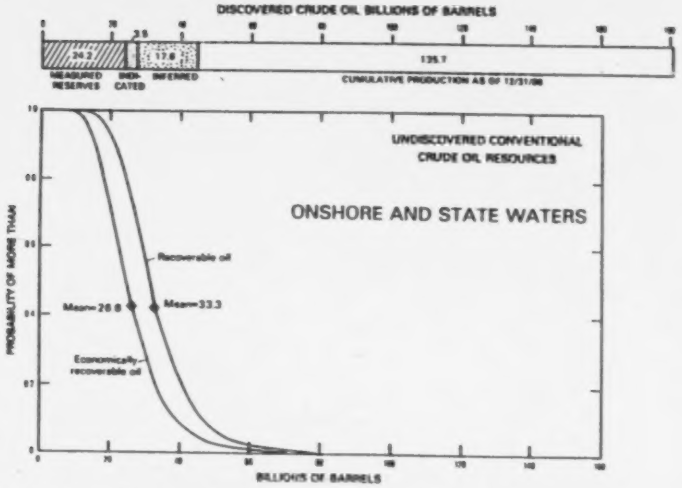


Figure 21. Cumulative probability distributions for estimates of undiscovered recoverable and undiscovered economically recoverable crude oil resources, onshore and State waters, United States.

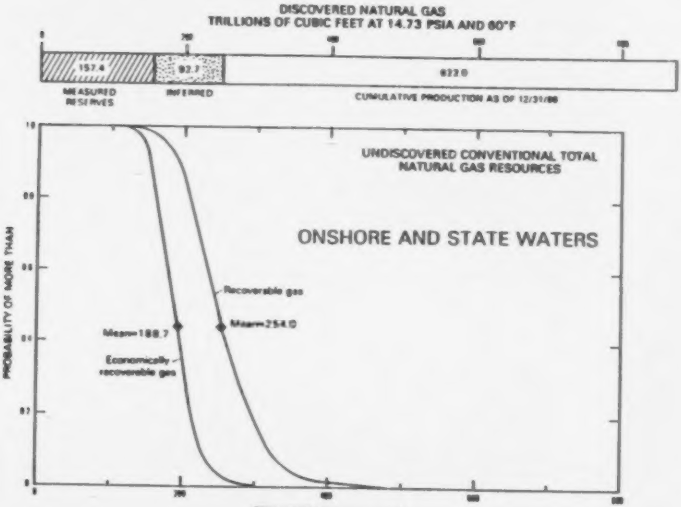


Figure 22. Cumulative probability distributions for estimates of undiscovered recoverable and undiscovered economically recoverable natural gas resources, onshore and State waters, United States.

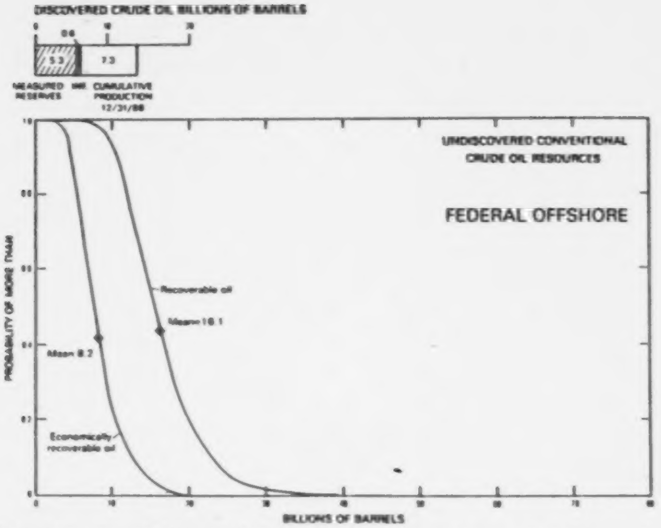


Figure 23. Cumulative probability distributions for estimates of undiscovered recoverable and undiscovered economically recoverable crude oil resources, Federal offshore United States. INF, inferred reserves.

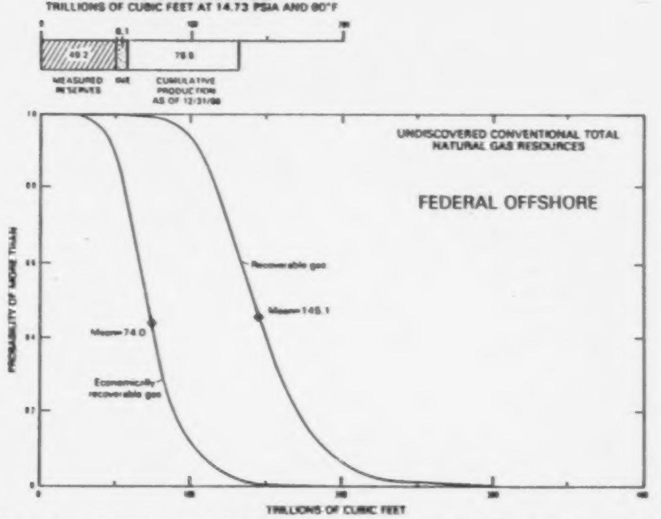


Figure 24. Cumulative probability distributions for estimates of undiscovered recoverable and undiscovered economically recoverable natural gas resources, Federal offshore United States. INF, inferred reserves.

The mean of the distribution of possible values for the undiscovered economically recoverable conventional petroleum resources (oil, natural gas, and NGL) is 88 BBOE, and the mean of the undiscovered recoverable resources is 125 BBOE. On the basis of barrels of oil equivalent, approximately one-fourth of the undiscovered economically recoverable resources and one-third of the undiscovered recoverable resources are estimated to be in the Federal offshore. These estimates are lower than previous estimates but show that significant conventional oil and gas resources remain to be discovered. Additions also can be expected from future enhanced recovery techniques and practices, which would increase recovery efficiencies beyond those used in this assessment. Additions attributable to other "unconventional" resources, which are largely dependent upon increased price and future technologic advances, are not estimated.

ACKNOWLEDGMENTS

Integration of a vast quantity of information into this assessment of the Nation's petroleum resources required the involvement of approximately 50 USGS and 400 MMS scientists in addition to the authors.

Assessment of the Onshore and Offshore State Waters

The following people are acknowledged for their contributions in assembling data and taking part in the appraisal process for the assessment of the onshore and State waters:

Geologic Division, U.S. Geological Survey

Branch of Petroleum Geology
  Corpus Christi, Texas
    R.Q. Foote
    L.M. Massingill
    R.H. Wells
  Denver, Colorado
    M.M. Ball
    W.C. Butler
    R.R. Charpentier
    J.L. Clayton
    T.S. Dyman
    T.M. Finn
    D.L. Gautier
    R.B. Halley
    D.K. Higley
    B.E. Law
    J. Libbey-French
    C.M. Molenaar
    J.T. Parrish
    W.J. Perry, Jr.
    R.B. Powers
    S.E. Prensky
    D.D. Rice
    K. Robinson
    C.W. Spencer
    M.E. Tennyson
  Menlo Park, California
    K.J. Bird
    C.M. Isaacs
    C.E. Kirschner
    L.B. Magoon
    R.G. Stanley
  Missoula, Montana
    J.A. Peterson
  Rapid City, South Dakota
    J.E. Fox

Branch of Sedimentary Processes
  Reston, Virginia
    K.C. Bayer
    W. deWitt, Jr.
    R.T. Ryder
    A.P. Schultz
  Denver, Colorado
    S.E. Frezon
    M.E. Henry
    R.J. Hite
    A.C. Huffman
    R.C. Johnson
    E.K. Maughan
    E.A. Merewether
  Menlo Park, California
    L.A. Beyer
    T.R. Bruns
    H.E. Cook
    M.A. Fisher
    M.A. Keller
    H. McLean

Branch of Coal Geology
  Denver, Colorado
    J.R. Hatch

We also wish to acknowledge the following USGS employees for their efforts in the initial play review process:

O.W. Girard
C.D. Masters
B.M. Miller
D.D. Rice

The following individuals, listed by organization, also contributed as advisors, consultants, or participants in the appraisal process for the assessment of the onshore and State waters:

U.S. Geological Survey
  Geologic Division, Branch of Pacific-Arctic Marine Geology
  Menlo Park, California
    D.S. McCulloch
    P.D. Snavely, Jr.
    J.G. Vedder

Bureau of Land Management
  Bakersfield, California
    T. Moore
    Gregg Wilkerson
  Portland, Oregon
    Nancy Katzuras
    Leroy M. Mohorich
  Washington, D.C.
    Donnie Shaw

Minerals Management Service
  Los Angeles, California
    Frank Webster
    David Griggs
  Metairie, Louisiana
    William Sweet

Office of Applied Analysis, U.S. Department of Energy
  Dallas, Texas
    J.W. Dietzman
    James Hicks
    J.H. Wood
    J.S. Sanders

Oregon Department of Mineral Industries
  Portland, Oregon
    Dennis Olmstead

Other USGS personnel helped with technical support. L.P. Williams, R.R. Charpentier, K.I. Cunningham, and R.C. Obuch provided computer data processing and map preparation assistance. J.S. Wesley made literature searches and data retrievals. R.H. Balay wrote several computer programs, including graphics routines. L.P. Williams typed the manuscript.

Assessment of the Federal Offshore Waters

The resource assessment methodology used by the MMS is time and labor intensive. Limited space in this report does not permit individual mention of the approximately 400 MMS people involved in the national assessment. However, the efforts of these geoscience professionals and support staff of the responsible organizational units are acknowledged:

Minerals Management Service

Offshore Resource Evaluation Division
Headquarters, Reston, Virginia

Office of Resource Evaluation
Alaska Region, Anchorage, Alaska

Office of Resource Evaluation
Atlantic Region, Vienna, Virginia

Office of Resource Evaluation
Gulf of Mexico Region, New Orleans, Louisiana

Office of Resource Evaluation
Pacific Region, Los Angeles, California

SELECTED REFERENCES

American Petroleum Institute, 1976, Standard definitions for petroleum statistics: Washington, D.C., American Petroleum Institute Technical Report 1, 2d ed., 40 p.

American Petroleum Institute, American Gas Association, and Canadian Petroleum Association, 1967-1980, Reserves of crude oil, natural gas liquids, and natural gas in the United States and Canada (annual volumes for the years 1966-1979): New York, American Petroleum Institute.

Bally, A.W., 1987, Phanerozoic basin evolution in North America: Episodes, v. 10, no. 4, p. 248-253.

Chase Econometric Associates, Inc., 1986, Energy Analysis Quarterly, Third Quarter, 1986: Bala Cynwyd, Pa., Chase Econometric Associates.

Cooke, L.W., 1985, Estimates of undiscovered economically recoverable oil and gas resources for the Outer Continental Shelf as of July 1984: U.S. Minerals Management Service OCS Report MMS 85-0012, 45 p.

Crovelli, R.A., 1986, A comparison of analytical and simulation methods for petroleum play analysis and aggregation: U.S. Geological Survey Open-File Report 86-97, 21 p.

———1987, Probability theory versus simulation of petroleum potential in play analysis, *in* Albin, S.L., and Harris, C.M., eds., Statistical and computational issues in probability modeling, pt. 1: Annals of Operations Research, v. 8, p. 363-381.

Crovelli, R.A., and Balay, R.H., 1986, FASP, an analytical resource appraisal program for petroleum play analysis: Computers and Geosciences, v. 12, no. 4B, p. 423-475.

Data Resources, Inc., 1986, Energy Review, Autumn 1986: Lexington, Mass., Data Resources, Inc., 213 p.

Dolton, G.L., Carlson, K.H., Charpentier, R.R., Coury, A.B., Crovelli, R.A., Frezon, S.E., Khan, A.S., Lister, J.H., McMullin, R.H., Pike, R.S., Powers, R.B., Scott, E.W., and Varnes, K.L., 1981, Estimates of undiscovered recoverable conventional resources of oil and gas in the United States: U.S. Geological Survey Circular 860, 87 p.

Eardley, A.J., 1951, Structural geology of North America: New York, Harper, 624 p.

Energy Information Administration, 1987a, U.S. crude oil, natural gas, and natural gas liquids reserves—1986 annual report: U.S. Department of Energy, Energy Information Administration Report DOE/EIA-0216(86), Washington, D.C., 103 p.

———1987b, Annual Energy Outlook 1986: U.S. Department of Energy, Energy Information Administration, Energy

Information Administration Report DOE/EIA-0383 (86), Washington, D.C., 70 p.

Exxon Company, U.S.A., Exploration department, 1976, U.S. oil and gas potential: Exxon Company, U.S.A., 10 p. (March 1976).

Fisher, W.L., Finley, R.J., Senc, S.J., Ruppel, S.C., White, G.W., Ayers, W.B., Jr., and Dutton, S.P., 1988, An assessment of the natural gas resource base of the United States: Austin, Texas, Bureau of Economic Geology, p. 1–77.

Gillette, R., 1974, Oil and gas resources—did USGS gush too high?: Science, v. 185, no. 4146, p. 127–130.

Halbouty, M.T., and Moody, J.D., 1980, World ultimate reserves of crude oil: 10th World Petroleum Congress, Bucharest, 1979, Proceedings, v. 2, p. 291–301.

Hewitt, J.E., Brooke, J.P., Compton, J.W., and Knipmeyer, J.H., 1987, Estimated oil and gas reserves, Gulf of Mexico, December 31, 1986: U.S. Minerals Management Services OCS Report MMS 87–0070, 26 p.

Houghton, J.C., 1988, Use of the truncated shifted Pareto distribution in assessing size distribution of oil and gas fields: Mathematical Geology, v. 20, no. 8, p. 907–938.

Hubbert, M.K., 1974, U.S. energy resources, a review as of 1972, pt. 1, *in* A national fuels and energy policy study: U.S. 93d Congress, 2d Session, Senate Committee on Interior and Insular Affairs, Committee Print, Serial no. 93–40 (92–75), 267 p.

King, P.B., 1977, The evolution of North America (revised ed.): Princeton, New Jersey, Princeton University Press, 197 p.

Lewis, C.J., 1986, Are our oil and gas resource estimates realistic?, *in* Rice, D.D., ed., Oil and gas assessment—methods and applications: American Association of Petroleum Geologists Studies in Geology No. 21, p. 195–202.

Maxwell, J.C., 1987, Geology in the U.S.A.: From passive to dynamic earth in 50 years: Episodes, v. 10, no. 4, p. 238–242.

Mead, W.J., Sorensen, P.E., Jones, R.O., and Moseidjord, A., 1980a, Competition and performance in OCS oil and gas lease sales and lease development, 1954–1969: Final Report, USGS Contract No. 14–08–0001–16552, 179 p.

Mead, W.J., Sorensen, P.E., Moseidjord, A., Muraska, D.D., 1980b, Additional studies of competition and performance in OCS oil and gas sales, 1954–1975: Final Report, USGS Contract No. 14–08–001–18678, 109 p.

Mead, W.J., Moseidjord, A., and Sorensen, P.E., 1983, The rate of return earned by lessees under cash bonus bidding for OCS oil and gas leases: Energy Journal, v. 4, p. 37–52.

Miller, B.M., Thomsen, H.L., Dolton, G.L., Coury, A.B., Hendricks, T.A., Lennartz, F.E., Powers, R.B., Sable, E.G., and Varnes, K.L., 1975, Geological estimates of undiscovered recoverable oil and gas resources in the United States: U.S. Geological Survey Circular 725, 78 p.

National Petroleum Council, 1980, Unconventional gas sources: Tight gas reservoirs, v. 5, pt. I, 222 p., and pt. II, 767 p.; Executive summary, 32 p.

National Research Council, Committee on Mineral Resources and Environment (COMRATE), 1975, Mineral resources and the environment: National Academy of Sciences, 348 p.

Nehring, R., with Van Driest, E.R., II, 1981, The discovery of significant oil and gas fields in the United States: The Rand Publication Series R-2654/1-USGS/DOE, 2 v., 236 p. (with appendix, v. 2, of 477 p.).

NRG Associates, Inc., 1986, The significant oil and gas fields of the United States (through December 31, 1983): Available from Nehring Associates, Inc., P.O. Box 1655, Colorado Springs, CO 80901.

Oil and Gas Journal, 1978, Shell: Alaska holds 58 percent of future U.S. oil finds: Oil and Gas Journal, v. 76, no. 47, p. 214.

Petroleum Information Corporation, 1986a, Petroleum Data System (through 1985): Available from Petroleum Information Corporation, 4100 East Dry Creek Road, Littleton, CO 80122.

———1986b, Well History Control System (through December 1985): Available from Petroleum Information Corporation, 4100 East Dry Creek Road, Littleton, CO 80122.

———1987, National production system (through 1985): Available from Petroleum Information Corporation, 4100 East Dry Creek Road, Littleton, CO 80122.

Platt's Oilgram News, 1984, 300 tcf of undiscovered U.S. gas—Exxon: Platt's Oilgram News, v. 62, no. 82, p. 2, April 27, 1984.

Potential Gas Committee, 1971, Potential supply of natural gas in the United States (as of December 31, 1970): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 41 p.

———1973, Potential supply of natural gas in the United States (as of December 31, 1972): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 48 p.

———1977, Potential supply of natural gas in the United States (as of December 31, 1976): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 45 p.

———1979, Potential supply of natural gas in the United States (as of December 31, 1978): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 75 p.

———1981, Potential supply of natural gas in the United States (as of December 31, 1980): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 119 p.

———1983, Potential supply of natural gas in the United States (as of December 31, 1982): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 74 p.

———1985, Potential supply of natural gas in the United States (as of December 31, 1984): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 161 p.

———1987, Potential supply of natural gas in the United States (as of December 31, 1986): Golden, Colorado, Potential Gas Agency, Colorado School of Mines, 160 p.

Raftery, P.J., and Wolfson, S.A., 1987, Estimated oil and gas reserves, Pacific Outer Continental Shelf (as of December 31, 1986): U.S. Minerals Management Service OCS Report MMS 87-0045, 14 p.

Rozendal, R.A., 1986, Conventional U.S. oil and gas remaining to be discovered: Estimates and methodology used by Shell Oil Company, *in* Rice, D.D., ed., Oil and gas assessment— methods and applications: American Association of Petroleum Geologists Studies in Geology No. 21, p. 151–158.

Theobald, P.K., Schweinfurth, S.P., and Duncan, D.C., 1972, Energy resources of the United States: U.S. Geological Survey Circular 650, 27 p.

U.S. Bureau of Mines and the U.S. Geological Survey, 1980, Principles of a resource/reserve classification for minerals: U.S. Geological Survey Circular 831, 5 p.

U.S. Geological Survey, 1974, USGS releases revised U.S. oil and gas resource estimates: Washington, D.C., U.S. Department of the Interior, Geological Survey, News Release, March 26, 1974.

U.S. Geological Survey and the Minerals Management Service, 1988, National assessment of undiscovered conventional oil and gas resources: USGS-MMS Working Paper, Open-File Report 88-373, 511 p.

Vlissides, S.D., and Quirin, B.A., 1964, Oil and gas fields of the United States exclusive of Alaska and Hawaii: U.S. Geological Survey, scale 1:2,500,000.

APPENDIX A: UNDISCOVERED CONVENTIONAL OIL, GAS, AND NATURAL GAS LIQUIDS RESOURCES BY GEOLOGIC PROVINCE

This section presents the estimates of undiscovered recoverable and economically recoverable conventional oil, gas, and natural gas liquids resources for the onshore and offshore geologic provinces of the United States. Figures A1 and A2 show the province boundaries for the lower 48 States and Alaska areas, respectively. The province numbers on the maps correspond to those in tables A1 through A4, which list estimates of *undiscovered recoverable* and *economically recoverable* conventional oil, gas, and natural gas liquids for onshore provinces and adjacent State waters of the United States and estimates of undiscovered recoverable and economically recoverable oil and gas for Federal offshore provinces of the United States.

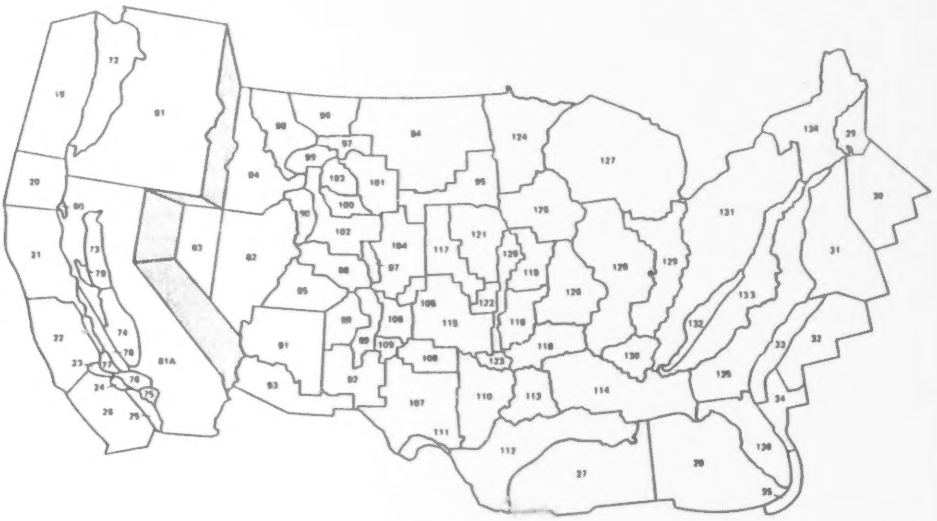

72
19
20
21
22
23
24
26
73
74
75
76
77
78
79
80
81A
83
82
84
85
90
91
93
94
95
97
99
100
101
102
103
104
106
107
109
110
111
112
113
114
115
117
118
119
120
121
122
123
124
126
127
128
129
130
131
132
133
134
135
136
27
28
29
30
31
32
33
34
35

Figure A1. Index map of lower 48 States showing provinces assessed. Names of provinces are listed by number in tables A1 and A2.

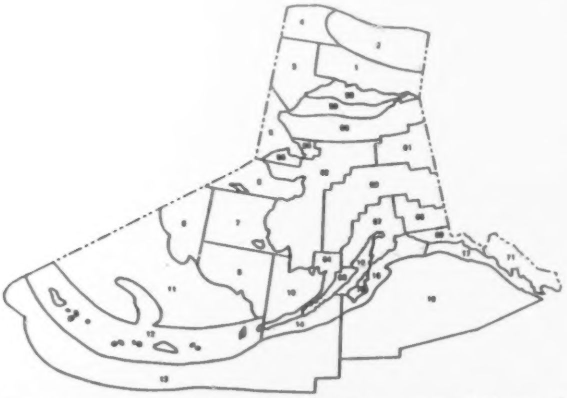

4
2
3
1
6
7
8
11
12
13
10
14
16
17
71

Figure A2. Index map of Alaska showing provinces assessed. Names of provinces are listed by number in tables A1 and A2.

Table A1. Estimates of undiscovered recoverable conventional oil, gas, and natural gas liquids (NGL) in onshore provinces and adjacent State waters of the United States

[Mean value totals may not be equal to the sums of the component means given elsewhere because numbers have been independently rounded. Fractile values (F_{95}, F_5) are not additive. Gas includes both nonassociated and associated-dissolved gas. Negl., negligible quantity; —, no estimate. F_{95} represents a 19 in 20 chance and F_5 represents a 1 in 20 chance of the occurrence of at least the amount tabulated]

		Crude oil (billion barrels)			Gas (trillion cubic feet)			NGL (billion barrels)		
		F_{95}	F_5	Mean	F_{95}	F_5	Mean	F_{95}	F_5	Mean
Region 1--Alaska										
058	Arctic Coastal Plain	1.50	14.80	6.00	4.66	58.24	22.11	0.13	1.41	0.56
059	Northern Foothills	.67	5.12	2.24	4.03	24.31	11.49	.07	.44	.21
060	Southern Foothills	.58	13.18	4.35	2.85	61.56	20.49	.04	.87	.29
061	Kandik	.00	.49	.11	.00	.49	.11	.00	.00	.00
062	Alaska Interior	.00	.00	.00	.45	2.85	1.33	.00	Negl.	Negl.
063	Interior Lowlands (incl. in 062)									
064	Bristol basin	.00	.00	.00	.11	.67	.32	.00	.00	.00
065	Hope basin	-	-	-	-	-	-	-	-	-
066	Copper River (incl. in 062)									
067	Cook Inlet	.09	.64	.29	.35	3.91	1.53	.00	Negl.	Negl.
068	Alaska Peninsula (Incl. in 062)									
069	Gulf of Alaska	.03	.58	.19	.03	2.00	.56	Negl.	.01	Negl.
070	Kodiak	-	-	-	-	-	-	-	-	-
071	Southeastern Alaska	-	-	-	-	-	-	-	-	-
Region 2--Pacific Coast										
072	Western Oregon-Washington	0.00	0.00	0.00	0.87	4.29	2.18	0.00	0.00	0.00
073	Sacramento basin	.00	.00	.00	.76	3.37	1.78	Negl.	Negl.	Negl.
074	San Joaquin basin	.55	3.22	1:53	1.23	6.69	3.27	.08	.53	.24
075	Los Angeles basin	.24	1.42	.68	.29	1.69	.81	.02	.09	.04
076	Ventura basin	.20	1.63	.70	.40	2.93	1.30	.02	.12	.05
077	Santa Maria basin	.13	.49	.27	.11	.44	.24	.01	.02	.01
078	Central Coastal	.05	.72	.27	.04	.58	.21	Negl.	.02	.01
079	Sonoma-Livermore basin	.00	.01	.01	.00	.01	.01	.00	.00	.00
080	Humboldt basin	.00	.00	.00	.01	.10	.04	.00	.00	.00
081	Eastern Oregon-Washington	.00	.00	.00	.43	2.39	1.16	Negl.	Negl.	Negl.
81A	Eastern California	-	-	-	-	-	-	-	-	-
Region 3--Colorado Plateau and Basin and Range										
082	Eastern Basin and Range	0.09	0.65	0.29	0.03	0.47	0.17	Negl.	0.01	Negl.
083	Western Basin and Range	Negl.	.06	.02	Negl.	.14	.04	Negl.	Negl.	Negl.
084	Idaho-Snake River	.00	.00	.00	.01	.10	.04	0.00	.00	0.00
085	Paradox basin	.01	.72	.20	.04	1.26	.38	Negl.	.01	Negl.
086	Uinta-Piceance basin	.04	.55	.20	1.11	3.76	2.19	.01	.03	.02
087	Park basins	Negl.	.03	.01	.01	.05	.02	.00	.00	.00
088	San Juan basin	.04	.16	.09	1.40	2.73	2.00	Negl.	Negl.	Negl.
089	Albuquerque-Santa Fe rift	Negl.	.07	.02	.06	.63	.25	.00	.00	.00
090	Wyoming thrust belt	.21	1.19	.58	6.29	31.31	15.81	.20	1.34	.61
091	Northern Arizona	.02	.27	.10	.01	.07	.03	.00	.00	.00
092	South Central New Mexico	Negl.	.05	.02	.05	.70	0.26	.00	.00	.00
093	Southern Arizona-Southwestern New Mexico	Negl.	.02	.01	.02	.23	.09	.00	.00	.00
Region 4--Rocky Mountains and Northern Great Plains										
094	Williston basin	0.49	1.15	0.78	0.49	1.07	0.74	0.03	0.06	0.04
095	Sioux Arch (incl. in 094)									
096	Sweetgrass Arch	.05	.18	.10	.31	.95	.57	Negl.	Negl.	Negl.
097	Central Montana	.01	.06	.03	.01	.02	.01	.00	0.00	.00
098	Montana overthrust	Negl.	.04	.01	.42	8.72	2.92	.01	0.19	.07
099	Southwestern Montana	Negl.	.06	.02	.07	1.07	.38	Negl.	0.02	.01
100	Wind River basin	.09	.37	.20	.82	3.55	1.89	.01	0.02	.01
101	Powder River basin	1.16	3.82	2.25	1.38	4.78	2.76	.03	0.12	.06
102	Southwestern Wyoming	.06	.47	.21	1.32	6.76	3.38	.02	0.09	.05
103	Bighorn basin	.10	.49	.25	.18	1.59	.66	Negl.	0.02	.01
104	Denver basin	.37	.87	.59	.96	2.76	1.71	.04	0.08	.06
105	Las Animas Arch	.02	.07	.04	.04	.15	.09	.00	0.00	.00
106	Raton-Sierra Grande	Negl.	.02	.01	.02	.36	.13	Negl.	Negl.	Negl.

Table A1. Estimates of undiscovered recoverable conventional oil, gas, and natural gas liquids (NGL) in onshore provinces and adjacent State waters of the United States—Continued

	Crude oil (billion barrels)			Gas (trillion cubic feet)			NGL (billion barrels)		
	F_{95}	F_5	Mean	F_{95}	F_5	Mean	F_{95}	F_5	Mean
Region 5--West Texas and Eastern New Mexico									
107 Permian basin	0.99	3.18	1.89	10.17	28.11	17.74	0.25	0.75	0.46
108 Palo Duro basin	.05	.24	.13	.02	.11	.05	.00	Negl.	Negl.
109 Pedernal uplift	-	-	-	-	-	-	-	-	-
110 Bend Arch-Ft. Worth basin	.37	.76	.54	1.00	2.31	1.57	.05	.10	.07
111 Marathon fold belt	.00	.00	.00	.28	1.63	.78	Negl.	.01	Negl.
Region 6--Gulf Coast									
112 Western Gulf basin	1.59	5.16	3.05	38.71	99.79	64.78	1.02	2.78	1.76
113 East Texas basin	.18	.80	.42	1.51	4.59	2.78	.06	.18	.11
114 La.-Miss. Salt basins	.48	1.16	.77	8.06	24.59	14.91	.57	1.80	1.07
Region 7--Mid-Continent									
115 Anadarko basin	0.49	1.53	0.92	13.77	41.04	25.12	0.33	0.90	0.57
116 Arkoma basin	Negl.	.07	.03	1.01	3.24	1.93	.00	.00	.00
117 Central Kansas uplift	.23	.46	.34	.08	.17	.12	Negl.	Negl.	Negl.
118 Cherokee platform	.18	.37	.27	.36	.74	.53	.01	.02	.01
119 Forest City basin	Negl.	Negl.	Negl.	.01	.02	.01	.00	.00	.00
120 Nemaha uplift	.07	.18	.12	.12	.28	.19	Negl.	.01	Negl.
121 Salina basin	.01	.02	.02	Negl.	.01	Negl.	.00	Negl.	Negl.
122 Sedgwick basin	.06	.11	.08	.32	.66	.47	.01	.01	.01
123 Southern Oklahoma	.05	.21	.11	.15	.52	.30	.01	.02	.01
124 Sioux uplift (incl. in 125)									
125 Iowa Shelf	.00	.00	.00	.00	.31	.06	.00	Negl.	Negl.
126 Ozark uplift	.00	.00	.00	.00	.00	.00	.00	.00	.00
Region 8--Eastern Interior									
127 Michigan basin	0.63	1.62	1.05	3.92	13.40	7.78	0.10	0.30	0.19
128 Illinois basin	.30	.67	.46	.16	1.63	.66	.01	.02	.01
129 Cincinnati Arch	.05	.18	.10	.07	.22	.13	Negl.	Negl.	Negl.
130 Black Warrior basin	Negl.	.01	.01	.73	1.98	1.26	Negl.	.01	.01
131 Appalachian basin	.08	.25	.15	2.77	12.29	6.46	.07	.31	.16
132 Blue Ridge overthrust	.00	.00	.00	.22	1.93	.81	.00	.00	.00
133 Piedmont	.01	.09	.04	.05	.27	.13	.00	.00	.00
134 New England-Adirondack (incl. in 132)									
Region 9--Atlantic Coast									
135 Atlantic Coastal Plain (incl. in 133)									
136 Southern Florida	0.06	0.50	0.21	0.01	0.04	0.02	0.00	0.00	0.00

Table A2. Estimates of undiscovered recoverable oil and gas in Federal offshore provinces of the United States

[Mean value totals may not be equal to the sums of the component means given elsewhere because numbers have been independently rounded. Fractile values (F_{95}, F_5) are not additive. Gas includes both nonassociated and associated-dissolved gas. Negl., negligible quantity. F_{95} represents a 19 in 20 chance and F_5 represents a 1 in 20 chance of the occurrence of at least the amount tabulated]

		Crude oil (billion barrels)			Gas (trillion cubic feet)		
		F_{95}	F_5	Mean	F_{95}	F_5	Mean
Region 1A--Alaska							
1	Beaufort Shelf	0.49	3.74	1.27	2.14	12.81	8.26
2	Beaufort basin	Negl.					
3	Chukchi Sea	.00	7.19	2.22	.00	16.87	6.33
4	Chukchi Borderland	Negl.					
5	Hope basin	.00	.04	.02	.00	.94	.26
6	Norton basin	.00	.05	.01	.00	1.79	.19
7	St. Matthew-Hall	Negl.					
8	Navarin basin	.00	.12	.07	.00	.10*	.23
9	St. George basin	.00	.05	.03	.00	1.46	.37
10	Northern Aleutian basin	.00	.02*	.03	.00	.70	.16
11	Bering basin	Negl.					
12	Aleutian Arc	Negl.					
13	Aleutian Trench	Negl.					
14	Shumagin Shelf	.00	.00	.01	.00	.00	.04
15	Cook Inlet	.00	.30	.03	.00	.67	.05
16	Kodiak Shelf	.00	.18	.04	.00	.39	.20
17	Gulf of Alaska Shelf	.00	1.39	.12	.00	4.59	.67
18	Gulf of Alaska basin	Negl.					
Region 2A--Pacific Coast							
19	Oregon-Washington	0.00	0.24	0.06	0.00	2.57	0.57
20	Northern California-Southern Oregon	.00	.40	.13	.00	5.04	1.61
21	Central California	.68	2.45	1.55	.83	3.63	1.93
22	Santa Maria	.10	1.03	.59	.08	.71	.54
23	Santa Barbara-Ventura	.18	.49	.32	.48	1.35	.90
24	Los Angeles basin	.00	.42	.09	.00	.73	.13
25	Inner Banks	.07	.83	.45	.06	1.84	.78
26	Outer Banks	.00	.89	.33	.00	4.40	1.55
Region 6A--Gulf of Mexico							
27	Cenozoic	5.07	14.60	9.27	58.36	154.91	100.34
28	Mesozoic	.12	.52	.30	.55	7.84	3.00
Region 9A--Atlantic Coast							
29	Gulf of Maine	0.00	0.00	Negl.	0.00	0.00	0.02
30	Georges Bank	.00	.38	.10	.00	6.75	1.94
31	Baltimore Canyon	.05	1.16	.48	1.34	22.46	9.72
32	Carolina Trough	.00	.71	.20	.00	13.37	3.57
33	Southeastern Georgia Embayment	.00	.00	Negl.	.00	.00	.02
34	Blake Plateau	.00	.56	.08	.00	7.66	1.38
35	Florida Straits	.00	.45	.08	.00	1.86	.38

* In these cases, the low marginal probability causes the risked mean to be located at a percentile below the 5th percentile, so the result is that the risked mean is greater than the risked 5 percent estimate.

Table A3. Estimates of undiscovered economically recoverable conventional oil, gas, and natural gas liquids (NGL) in onshore provinces and adjacent State waters of the United States

[Mean value totals may not be equal to the sums of the component means given elsewhere because numbers have been independently rounded. Fractile values (F_{95}, F_5) are not additive. Gas includes both nonassociated and associated-dissolved gas. Negl., negligible quantity. F_{95} represents a 19 in 20 chance and F_5 represents a 1 in 20 chance of the occurrence of at least the amount tabulated]

		Crude oil (billion barrels)			Gas (trillion cubic feet)			NGL (billion barrels)		
		F_{95}	F_5	Mean	F_{95}	F_5	Mean	F_{95}	F_5	Mean
Region 1--Alaska										
058	Arctic Coastal Plain	0.00	10.93	3.36	0.00	0.00	0.00	0.00	0.00	0.00
059	Northern Foothills	.00	2.64	.72	.00	.00	.00	.00	.00	.00
060	Southern Foothills	.00	12.64	3.59	.00	.00	.00	.00	.00	.00
061	Kandik	.00	.00	.00	.00	.00	.00	.00	.00	.00
062	Alaska Interior	.00	.00	.00	.00	.00	.00	.00	.00	.00
063	Interior Lowlands (incl. in 062)									
064	Bristol basin	.00	.00	.00	.00	.00	.00	.00	.00	.00
065	Hope basin	.00	.00	.00	.00	.00	.00	.00	.00	.00
066	Copper River (incl. in 062)									
067	Cook Inlet	.05	.60	.24	.15	3.69	1.20	.00	Negl.	Negl.
068	Alaska Peninsula (incl. in 062)									
069	Gulf of Alaska	.00	.00	.00	.00	.00	.00	.00	.00	.00
070	Kodiak	.00	.00	.00	.00	.00	.00	.00	.00	.00
071	Southeastern Alaska	.00	.00	.00	.00	.00	.00	.00	.00	.00
Region 2--Pacific Coast										
072	Western Oregon-Washington	0.00	0.00	0.00	0.80	4.28	2.06	0.00	0.00	0.00
073	Sacramento basin	.00	.00	.00	.72	3.25	1.70	Negl.	Negl.	Negl.
074	San Joaquin basin	.55	3.21	1.53	1.22	6.68	3.26	.08	.53	.24
075	Los Angeles basin	.20	1.50	.66	.25	1.60	.78	.01	.08	.04
076	Ventura basin	.16	1.65	.66	.34	2.80	1.21	.01	.12	.05
077	Santa Maria basin	.11	.50	.26	.10	.43	.23	.01	.02	.01
078	Central Coastal	.05	.71	.26	.04	.57	.21	Negl.	.02	.01
079	Sonoma-Livermore basin	.00	.01	Negl.	.00	.01	Negl.	.00	.00	.00
080	Humboldt basin	.00	.00	.00	Negl.	.08	.02	.00	.00	.00
081	Eastern Oregon-Washington	.00	.00	.00	.41	2.32	1.12	.00	Negl.	Negl.
081A	Eastern California	.00	.00	.00	.00	.00	.00	.00	.00	.00
Region 3--Colorado Plateau and Basin and Range										
082	Eastern Basin and Range	0.08	0.62	0.26	0.03	0.44	0.16	0.00	0.01	Negl.
083	Western Basin and Range	Negl.	.04	.01	Negl.	.13	.04	.00	Negl.	Negl.
084	Idaho-Snake River	.00	.00	.00	.00	.10	.03	.00	.00	.00
085	Paradox basin	.01	.68	.18	.03	1.20	.35	Negl.	.01	Negl.
086	Uinta Piceance basin	.03	.54	.19	1.08	3.70	2.15	.01	.03	.02
087	Park basins	Negl.	.03	.01	.01	.05	.02	.00	.00	.00
088	San Juan basin	.04	.15	.08	1.39	2.70	1.97	.00	Negl.	Negl.
089	Albuquerque-Santa Fe rift	Negl.	.07	.02	.05	.59	.22	.00	.00	.00
090	Wyoming thrust belt	.21	1.17	.56	6.22	31.15	15.70	.20	1.33	.61
091	Northern Arizona	.02	.27	.10	.01	.07	.03	.00	.00	.00
092	South Central New Mexico	Negl.	.05	.02	.05	.67	.24	.00	.00	.00
093	Southern Arizona-Southwestern New Mexico	Negl.	.01	.01	.02	.21	.08	.00	.00	.00
Region 4--Rocky Mountains and Northern Great Plains										
094	Williston basin	0.29	0.80	0.51	0.33	0.78	0.52	0.02	0.04	0.03
095	Sioux Arch (incl. in 094)									
096	Sweetgrass Arch	.04	.17	.09	.30	.93	.56	Negl.	Negl.	Negl.
097	Central Montana	.01	.06	.03	.01	.02	.01	.00	.00	.00
098	Montana overthrust	Negl.	.04	.01	.41	8.65	2.89	.01	.19	.07
099	Southwestern Montana	Negl.	.05	.01	.06	1.04	.36	Negl.	.02	.01
100	Wind River basin	.09	.36	.19	.79	3.49	1.84	.01	.02	.01
101	Powder River basin	1.02	3.55	2.04	1.21	4.45	2.51	.03	.12	.06
102	Southwestern Wyoming	.06	.46	.20	1.19	6.51	3.19	.02	.08	.04
103	Bighorn basin	.09	.47	.24	.17	1.55	.64	Negl.	.02	.01
104	Denver basin	.26	.67	.43	.77	2.44	1.46	.03	.06	.04
105	Las Animas Arch	.02	.05	.03	.04	.15	.08	.00	.00	.00
106	Raton-Sierra Grande	Negl.	.02	.01	.02	.34	.12	Negl.	Negl.	Negl.

Table A3. Estimates of undiscovered economically recoverable conventional oil, gas, and natural gas liquids (NGL) in onshore provinces and adjacent State waters of the United States—Continued

	Crude oil (billion barrels)			Gas (trillion cubic feet)			NGL (billion barrels)		
	F_{95}	F_5	Mean	F_{95}	F_5	Mean	F_{95}	F_5	Mean
Region 5--West Texas and Eastern New Mexico									
107 Permian basin	0.94	3.11	1.82	9.68	27.32	17.09	0.24	0.73	0.44
108 Palo Duro basin	.05	.23	.12	.02	.10	.05	Negl.	Negl.	Negl.
109 Pedernal uplift	.00	.00	.00	.00	.00	.00	.00	.00	.00
110 Bend Arch	.30	.63	.44	.91	2.14	1.44	.04	.10	.06
111 Marathon fold belt	.00	.00	.00	.26	1.58	.74	Negl.	.01	Negl.
Region 6--Gulf Coast									
112 Western Gulf basin	1.51	5.14	2.99	36.30	97.84	62.36	0.96	2.74	1.71
113 East Texas basin	.17	.77	.40	1.34	4.29	2.55	.05	.16	.10
114 La.-Miss. Salt basins	.36	.96	.62	7.09	23.90	14.41	.49	1.70	1.05
Region 7--Mid-Continent									
115 Anadarko basin	0.44	1.38	0.83	12.71	38.49	23.41	0.30	0.84	0.53
116 Arkoma basin	Negl.	.07	.02	.90	3.05	1.77	.00	.00	.00
117 Central Kansas uplift	.23	.46	.34	.08	.17	.12	Negl.	Negl.	Negl.
118 Cherokee platform	.18	.37	.26	.36	.73	.53	.01	.02	.01
119 Forest City basin	Negl.	Negl.	Negl.	.01	.02	.01	.00	.00	.00
120 Nemaha uplift	.07	.18	.11	.12	.27	.19	Negl.	.01	Negl.
121 Salina basin	.01	.02	.01	Negl.	.01	Negl.	.00	.00	.00
122 Sedgwick basin	.05	.10	.08	.31	.64	.46	.01	.01	.01
123 Southern Oklahoma	.04	.17	.09	.11	.45	.24	Negl.	.02	.01
124 Sioux Uplift (incl. in 125)									
125 Iowa Shelf	.00	.00	.00	.00	.22	.05	.00	Negl.	Negl.
126 Ozark uplift	.00	.00	.00	.00	.00	.00	.00	.00	.00
Region 8--Eastern Interior									
127 Michigan basin	0.61	1.59	1.03	3.70	13.03	7.47	0.10	0.29	0.18
128 Illinois basin	.30	.67	.46	.16	1.63	.66	.01	.02	.01
129 Cincinnati Arch	.05	.18	.10	.07	.22	.13	Negl.	Negl.	Negl.
130 Black Warrior basin	Negl.	.01	.01	.68	1.90	1.19	Negl.	.01	.01
131 Appalachian basin	.07	.22	.13	2.55	11.44	5.99	.07	.28	.15
132 Blue Ridge overthrust	.00	.00	.00	.18	1.93	.76	.00	.00	.00
133 Piedmont	.01	.08	.04	.04	.23	.11	.00	.00	.00
134 New England-Adirondack (incl. in 132)									
Region 9--Atlantic Coast									
135 Atlantic Coastal Plain (incl. in 133)									
136 Southern Florida	0.05	0.50	0.21	Negl.	0.04	0.02	0.00	0.00	0.00

Table A4. Estimates of undiscovered economically recoverable oil and gas in Federal offshore provinces of the United States

[Mean value totals may not be equal to the sums of the component means because numbers have been independently rounded. Fractile values (F_{95}-F_5) are not additive. Gas includes both nonassociated and associated-dissolved gas. Negl., negligible quantity. F_{95} represents a 19 in 20 chance and F_5 represents a 1 in 20 chance of the occurrence of at least the amount tabulated]

		Crude oil (billion barrels)			Gas (trillion cubic feet)		
		F_{95}	F_5	Mean	F_{95}	F_5	Mean
Region 1A--Alaska							
1	Beaufort Shelf	0.00	1.74	0.21	0.00	0.00	0.00
2	Beaufort basin	Negl.					
3	Chukchi Sea	.00	3.59	.59	.00	.00	.00
4	Chukchi Borderland	Negl.					
5	Hope basin	.00	.00	Negl.	.00	.00	.00
6	Norton basin	.00	.00	Negl.	.00	.00	.00
7	St. Matthew-Hall	Negl.					
8	Navarin basin	.00	.00	.03	.00	.00	.00
9	St. George basin	.00	.00	.01	.00	.00	.00
10	Northern Aleutian basin	.00	.00	.01	.00	.00	.00
11	Bering basin	Negl.					
12	Aleutian Arc	Negl.					
13	Aleutian Trench	Negl.					
14	Shumagin Shelf	.00	.00	Negl.	.00	.00	.00
15	Cook Inlet	.00	.00	Negl.	.00	.00	.00
16	Kodiak Shelf	.00	.00	.02	.00	.00	.00
17	Gulf of Alaska Shelf	.00	.00	.03	.00	.00	.00
18	Gulf of Alaska basin	Negl.					
Region 2A--Pacific Coast							
19	Oregon-Washington	0.00	0.23	.04	.00	2.44	0.46
20	Northern California-Southern Oregon	.00	.14	.04	.00	2.42	.69
21	Central California	.13	1.33	.74	.21	1.80	1.05
22	Santa Maria	.02	.61	.26	.02	.53	.25
23	Santa Barbara-Ventura	.13	.48	.29	.41	1.25	.79
24	Los Angeles basin	.00	.43	.09	.00	.76	.13
25	Inner Banks	.04	.82	.40	.05	1.52	.69
26	Outer Banks	.00	.90	.23	.00	4.22	1.11
Region 6A--Gulf of Mexico							
27	Cenozoic	2.24	9.04	5.36	28.24	102.33	62.10
28	Mesozoic	.05	.58	.27	.01	6.77	2.22
Region 9A--Atlantic Coast							
29	Gulf of Maine	0.00	0.00	Negl.	0.00	0.00	0.02
30	Georges Bank	.00	.19	.04	.00	4.16	.98
31	Baltimore Canyon	.00	.40	.10	.00	9.44	2.36
32	Carolina Trough	.00	.21	.03	.00	5.02	.77
33	Southeastern Georgia Embayment	Negl.					
34	Blake Plateau	.00	.16	.02	.00	2.51	.30
35	Florida Straits	.00	.42	.06	.00	.54	.08

APPENDIX B: CONDITIONAL RESOURCE ESTIMATES FOR THE FEDERAL OFFSHORE

Distributions of risked undiscovered resources incorporate the risk that hydrocarbons may not exist in an area. In mature exploration areas, such as the onshore United States and the Gulf of Mexico offshore, this risk is absent. However, in some regions of the Federal offshore, this risk can be considerable, particularly in frontier exploration areas. Conditional resource distributions (tables B1 and B2) remove this risk by assuming that hydrocarbons do exist in the area. The marginal probability (MPhc) indicates the chance that recoverable volumes of hydrocarbons actually exist in the area.

The estimates presented previously in this document are risked. Risked estimates are appropriate for comparisons, because by incorporating risk, all areas are placed on a common basis. Conditional estimates are not directly comparable because they are based on different conditions, as represented by the different marginal probabilities. However, if oil and gas do exist in the area, the amounts could be quite large. The conditional estimate is the appropriate indicator to consider when assessing the impact of development in an area if hydrocarbons are discovered.

Conditional distributions are presented in this appendix only for the Federal offshore, where the difference between conditional and risked distributions is most significant.

Table B1. Conditional estimates of undiscovered conventionally recoverable petroleum resources for Federal offshore provinces

[Mean value totals may not be equal to the sums of the component means because numbers have been independently rounded. Fractile values (F_5, F_{95}) are not additive. Gas includes both nonassociated and associated-dissolved gas. MPhc, marginal probability; Negl., negligible quantity; BB, billion barrels; TCF, trillion cubic feet]

Province	Conditional oil (BB)			Conditional Gas (TCF)			
	95% case	5% case	Mean case	95% case	5% case	Mean case	MPhc
ALASKA:							
Beaufort Shelf	0.49	3.74	1.27	2.14	12.81	8.26	1.00
Beaufort basin	Negl.						
Chukchi Sea	1.27	8.25	4.44	6.73	17.83	12.66	.50
Chukchi Borderland	Negl.						
Hope basin	.06	.44	.32	2.13	13.08	5.22	.05
Norton basin	.04	.88	.19	1.25	3.57	2.70	.07
St. Matthew-Hall	Negl.						
Navarin basin	.07	5.29	1.33	1.74	2.64	4.62	.05
St. George basin	.12	1.03	.59	3.98	12.47	7.41	.05
Northern Aleutian basin	.17	.85	.52	.48	10.09	3.12	.05
Bering basin	Negl.						
Aleutian Arc	Negl.						
Aleutian Trench	Negl.						
Shumagin Shelf	.11	.81	.40	1.44	2.15	1.96	.02
Cook Inlet	.08	.52	.32	.04	.89	.47	.10
Kodiak Shelf	.11	.88	.81	3.04	9.32	3.92	.05
Gulf of Alaska Shelf	.33	1.62	1.17	3.18	15.03	6.70	.10
Gulf of Alaska basin	Negl.						
Total Alaska	.59	11.21	3.84	4.67	39.42	16.75	1.00
ATLANTIC:							
Georges Bank	0.04	0.41	0.21	1.05	7.75	3.88	0.50
Gulf of Maine	.02	.06	.04	.45	1.78	1.02	.02
Baltimore Canyon	.05	1.16	.48	1.34	22.46	9.72	1.00
Blake Plateau	.02	.49	.34	.50	13.36	5.56	.25
Carolina Trough	.07	.69	.37	.69	16.25	6.49	.55
Southeastern Georgia Embayment	.03	.07	.05	.44	.97	.67	.03
Florida Straits	.04	.62	.26	.30	2.52	1.20	.32
Total Atlantic	.09	3.15	.96	6.78	33.71	17.03	1.00
GULF OF MEXICO:							
Cenozoic	5.07	14.60	9.27	58.36	154.91	100.34	1.00
Mesozoic	.12	.52	.30	.55	7.84	3.00	1.00
Total Gulf of Mexico	5.52	15.12	9.57	63.02	156.92	103.34	1.00
PACIFIC:							
Oregon-Washington	0.16	0.27	0.22	1.71	2.87	2.28	0.25
N. Calif.-S. Oreg.	.28	.44	.36	3.66	5.26	4.47	.36
Central California	1.09	2.56	1.63	1.42	3.10	2.03	.95
Santa Maria	.34	1.02	[illegible]	.19	.85	.57	.95
Santa Barbara-Ventura	.18	.49	.32	.48	1.35	.90	1.00
Inner Banks	.15	.81	.47	.37	2.08	.82	.95
Los Angeles basin	.06	.47	.12	.06	.82	.17	.76
Outer Banks	.39	.96	.66	1.90	4.89	3.10	.50
Total Pacific	.81	8.92	3.51	3.50	15.07	8.01	1.00
Total Federal Offshore	9.76	29.29	17.88	97.76	204.81	145.12	1.00

Table B2. Conditional estimates of undiscovered economically recoverable petroleum resources for Federal offshore provinces

[Mean value totals may not be equal to the sums of the component means because numbers have been independently rounded. Fractile values (F_5, F_{95}) are not additive. Gas includes both nonassociated and associated-dissolved gas. MPhc, marginal probability; Negl., negligible quantity; N/A, not available because of an insufficient number of data points; BB, billion barrels; TCF, trillion cubic feet]

	Conditional oil (BB)			Conditional Gas (TCF)			
Province	95% case	5% case	Mean case	95% case	5% case	Mean case	MPhc
ALASKA:							
Beaufort Shelf	0.55	4.02	1.44	0.00	0.00	0.00	0.14
Beaufort basin	Negl.						
Chukchi Sea	1.03	5.41	2.73	.00	.00	.00	.22
Chukchi Borderland	Negl.						
Hope basin	.20	1.96	.66	.00	.00	.00	.01
Norton basin	N/A	N/A	.58	.00	.00	.00	<.01
St. Matthew-Hall	Negl.						
Navarin basin	.17	4.95	1.14	.00	.00	.00	.03
St. George basin	.17	.91	.39	.00	.00	.00	.02
Northern Aleutian basin	.17	2.08	.61	.00	.00	.00	.02
Bering basin	Negl.						
Aleutian Arc	Negl.						
Aleutian Trench	Negl.						
Shumagin Shelf	.12	.57	.28	.00	.00	.00	.01
Cook Inlet	.14	.26	.17	.00	.00	.00	<.01
Kodiak Shelf	.13	1.23	.53	.00	.00	.00	.04
Gulf of Alaska Shelf	.17	2.12	.87	.00	.00	.00	.04
Gulf of Alaska basin	Negl.						
Total Alaska	1.10	7.24	3.32	.00	.00	.00	.28
ATLANTIC:							
Georges Bank	0.05	0.27	0.11	1.12	5.31	2.51	0.39
Gulf of Maine	.02	.07	.04	.62	1.81	1.09	.02
Baltimore Canyon	.07	.47	.22	2.36	11.46	5.35	.44
Blake Plateau	.11	.57	.31	1.72	8.40	4.67	.06
Carolina Trough	.07	.33	.15	1.61	7.76	3.53	.22
Southeastern Georgia Embayment	Not Economic						
Florida Straits	.18	.68	.35	.21	.79	.44	.18
Total Atlantic	.02	1.17	.32	2.63	10.22	5.65	.80
GULF OF MEXICO:							
Cenozoic	2.24	9.04	5.36	28.24	102.33	62.10	1.00
Mesozoic	.10	.58	.28	.01	6.84	2.32	.96
Total Gulf of Mexico	2.77	9.88	5.64	36.01	103.65	64.33	1.00
PACIFIC:							
Oregon-Washington	0.06	0.28	0.18	0.67	2.96	1.84	0.25
N. Calif.-S. Oreg.	.07	.16	.11	1.24	2.78	1.92	.36
Central California	.31	1.34	.77	.51	1.82	1.10	.95
Santa Maria	.05	.62	.27	.06	.54	.26	.95
Santa Barbara-Ventura	.13	.48	.29	.41	1.25	.79	1.00
Inner Banks	.12	.83	.42	.17	1.55	.72	.95
Los Angeles basin	.01	.49	.13	.01	.88	.18	.72
Outer Banks	.12	1.04	.50	.58	4.80	2.39	.47
Total Pacific	.34	6.02	2.10	1.78	11.04	5.17	1.00
Total Federal Offshore	4.24	15.93	8.91	44.31	113.84	74.00	1.00

Uranium and Radon Investigations

You have proposed a $274,000 (-13 percent) decrease in the Uranium and Radon Investigations program for fiscal year 1991. This decrease will discontinue four ongoing studies relating to the geologic factors controlling the concentration of radon gas in public and private facilities (page 197).

Question: How did you decide to discontinue these four studies as opposed to the other eight ongoing radon studies? What have you found in these studies that merits discontinuation?

Answer: The eight ongoing studies are uranium investigations, not radon studies. The four ongoing radon studies are investigating the geologic factors controlling the concentration of radon gas (Prince Georges County, Maryland; Colville Indian Reservation, Washington; Conifer, Colorado; and Atlanta, Georgia) being conducted with funds provided by the Congress in the FY 1990 appropriation act. In addition to the four radon studies shown in the Budget Justification, a fifth radon study near Lyons, Colorado, has been added in FY 1990 in response to the discovery of unusually high concentrations of radon in ground water in this region. These studies are being terminated due to fiscal constraints.

Data Collection and Analysis

You have proposed a 5 percent reduction in the number of continuous recording stream flow stations supported by the Data Collection and Analysis Program (page 217).

Question: How will you determine the types and locations of the stations to be discontinued?

Answer: Efforts will be made to select the stations so as to insure that their discontinuance will minimize the impact on the integrity of the national network. The locations of stations to be discontinued will be determined after consideration of the requirements of concerned Federal, State, and local agencies.

National Water Information Clearinghouse Program

The FY 1991 justification indicates that funds appropriated in FY 1990 for clearinghouse activities are being used to begin upgrading and modernizing existing water resources information systems that were established in the 1970's.

In addition, funds were used to conduct a series of program development workshops and seminars for Federal, State, and local agencies to coordinate planning for clearinghouse activities that are more responsive to the needs of the user community.

The FY 1991 budget indicates you are proposing to suspend some, or all of the activities associated with the establishment of a National Clearinghouse Program for water data.

Question: How does the proposed budget reduction for FY 1991 relate to the upgrading and modernizing of water resources information systems?

Answer: The budget proposed for FY 1991 does not provide for any additional modernization efforts to improve external access to USGS water data systems. Efforts to increase the accessibility to the National Water Data Exchange (NAWDEX) Water Data Sources Directory and the Master Water Data Index by non-expert users as well as placement of water resources abstracts on optical disks will be completed with current funding.

Question: Why do you no longer see a need to have a clearinghouse?

Answer: We continue to see a need for a clearinghouse, and some clearinghouse functions will continue to be performed in the USGS. However, due to budget constraints, the funding allocated for these purposes is being reduced.

Question: With the current budgets, when would the National Clearinghouse Program be complete and what are the costs to operate it?

Answer: The USGS report entitled "The Establishment of a Water Information Clearinghouse" which was submitted to the Senate and House Appropriations Subcommittees on Interior and Related Agencies in March 1989 outlined three phases necessary to achieve a fully operational clearinghouse. These were: (a) modernization of existing technology; (b) pilot clearinghouse; and (c) operational clearinghouse. At the FY 1990 funding level, phases (a) and (b) could be completed after several years. On page 6 of the subject report, the annual cost of a fully operational clearinghouse was estimated at $15.4 million.

National Mineral Resource Assessment

In FY 1989 and FY 1990, $1.5 million was added to initiate mineral resource investigations of the work on roadless areas identified during the development of the Idaho State Wilderness bill. The purpose of these funds was to acquire new data and to determine what type of minerals were in those lands so that policy makers could make better decisions on the uses of those lands.

This is a three year initiative done in conjunction with the Geological Survey, the Bureau of Mines and the Idaho Geological Survey.

For FY 1991, the last year of the initiative, the Bureau of Mines has put these funds in their budget request and the Geological Survey has not.

Question: Why does the Bureau put a higher priority on this initiative than the Survey?

Answer: The USGS also places a high priority on these mineral-resource assessments of roadless and RARE II lands in Idaho. Like the U.S. Bureau of Mines, the USGS also requested that the funding for this work be included in the budget. However, given the overall tight budget situation, the request was not able to be accommodated.

Question: What are your plans for the summer season with the funds added in FY 1990?

Answer: During FY 1990, two types of studies are planned: (a) field activities in those areas needing additional data acquisition in order to complete a mineral-resource assessment; and (b) commencement of mineral-resource assessments of selected groups of areas.

The following field-related activities are planned for FY 1990:

Proposed Area	Geological	Geophysical	Geochemical	Deposit Modelling
Black Warrior		x		x
Clearwater*		x	x	x
Cook Mt.*	x	x		x
East Weitas*	x	x		x
Kelly-Cayuse*	x	x		x
Mallard-Larkins*	x	x	x	x
Payette Crest*	x	x		x
Secesh*	x	x	x	x
Smokies*	x	x		x
Snow Bank	x	x	x	x
South Fork*	x	x	x	x
White Clouds	x			x

[*denotes areas or parts of areas where helicopter support is planned]

The following areas will be grouped together for the purposes of effecting a mineral-resource assessment. The planned date for completion of an administrative report is given in parentheses:

Grp 1 (9/30/90)	Grp 2 (1/30/91)	Grp 3 (5/30/91)	Grp 4 (9/30/91)	Grp 5 (9/30/91)
Black Warrior	Borah Peak	French Creek/ Patrick Buttes	Clear Water	Mt. Naomi
Hanson Lakes	Italian Peaks	Payette Crest	Cook Mtn	Palisades
Lime Creek	Pioneer Mts.	Secesh	East Weitas	Weingar
Red Mountain	Smokies	Snow Bank	Kelly-Cayuse	Hole
Ten Mile	White Clouds		Mallard Lakes	
	South Fork		Scotchman Peaks	

Question: If no additional funds are added in FY 1991 for this initiative, what will be done with the data collected by the Survey during the first two years?

Answer: Data collected to date will be made available to the U.S. Forest Service and other Federal land managers.

In September of last year, I wrote you and requested some general information on the initiative.

Specifically, I requested:

1. a map of the priority areas the Survey worked during the summer of 1989;

2. a summary of overhead charged against the $1.5 million;

3. a summary of overhead charged against the pass-through for the Idaho Geological Survey;

4. a breakdown of how the funds were spent;

5. the number of crews and supervisors in the field working on the initiative;

6. comments on the logistics coordination effort worked in 1989 and how to improve it in 1990.

You responded later the same month and indicated your appreciation of my interest, reiterated the work plan agreed upon in May of 1989, and stated that "teams of geologists, geochemists, and geophysicists began the field work."

On October 10, 1989, our two staffs met to discuss the progress made on the initiative during 1989. Your staff indicated that the additional information requested in my September letter would be forthcoming.

On October 30, 1989, you wrote and provided me with a summary of activities for the initiative as well as a brief status report on your FY 1990 plans.

Earlier this month, you wrote and provided a more detailed breakdown of the expenses charged against the initiative.

Since the initiative began, I have sought new information on these lands. I did not want a rehash of existing data from areas we already know a lot about.

I also wanted this work to be in addition to, and separate from, existing work in the State of Idaho. The Survey does important work in the State and there was no reason to have it disrupted. My goal was to craft and fund an initiative which would provide data on new areas without disrupting ongoing efforts.

While you have provided me with reams of information, I am still not comfortable that my goal has been attained.

Question: Have you been personally aware of the initiative?

Answer: Yes.

Question: Have you been personally aware of my inquiries as well as your responses?

Answer: Yes.

Question: Do you consider your responses to be complete?

Answer: Yes.

Question: Why was the interim report nearly two months late?

Answer: In our written response to your letter asking for an unscheduled interim report, we indicated that such a report could be completed in January 1990. This report was completed as promised and arrived from our Spokane Field Office on February 5, 1990. The report was delivered to your staff on February 21, 1990, coincidently with a letter providing the results of a financial compilation that you had requested previously.

QUESTIONS SUBMITTED BY SENATOR TED STEVENS

Question: In December 1989, Mt. Redoubt erupted. What type of USGS volcano observing equipment was used to study the eruption?

Answer: Equipment used to study the current eruption of Redoubt includes standard and high-frequency seismometers (for volcano monitoring and mudflow detection, respectively), slow-scan television, electronic distance measurement and other surveying equipment for use in the Drift River valley and on the Drift Glacier, a correlation spectrometer (COSPEC) for monitoring SO2 gas, a lightning detection system for measuring electrical discharges in ash clouds, voice and data communications systems, and a variety of computers in Fairbanks and Anchorage for analyzing the data.

Question: What does all of this equipment cost?

Answer: Since December 1989, equipment costs total $595,000 as of mid-March. This includes a small amount of instrument development time, but does not include another $50,000-100,000 of staff and helicopter time involved in installing and maintaining these instruments. Instruments installed near the summit and vent and in the Drift River valley are vulnerable to eruptions and debris flows (several instruments have already had to be replaced); the $595,000 includes replacement costs to date.

Question: Does the current budget cover expenses for what is needed?

Answer: No. The current budget of $500,000/year covers only minimal seismic monitoring of Augustine, Iliamna, Redoubt, and Spurr volcanoes, and minimal tilt monitoring of Augustine. Emergency expenses for Redoubt total about $1.1 million as of March 1, 1990. The USGS is currently seeking $2.7 million in emergency FY 1990 funding. To continue the Redoubt response at its present level in FY 1991, the USGS would need additional funding even beyond our current request of $2.7 million. Included in our request for $2.7 million for FY 1990 is an initial set of Global Positioning System (GPS) receivers which would significantly improve our information about inflation (swelling) or deflation of the volcano as a sign of what further activity is likely. Also included is a request to support intensive study of the significance of each type of earthquake beneath Redoubt, so that we can better interpret the records of normal seismic monitoring, and manpower- and helicopter-intensive field surveys to track changing hazards in the Drift River valley. Funding for aerial photography and ground surveys of the Drift River channel is included in the request to provide information about channel changes or erosion that could endanger the Drift River oil storage facility.

Question: What is the USGS role in the Alaska Volcano Observatory? How do the organizations relate?

Answer: Public Law 93-288 requires the USGS to assess and provide warnings of volcanic hazards throughout the U.S., including Alaska. To fulfill this obligation, the USGS operates the Anchorage office of AVO, handling most of the geologic and other non-seismic observations and most of the interagency liaison, and helps to staff the seismic group in Fairbanks as well. The Scientist-in-charge of AVO is from the USGS. The USGS' Water Resources Division (WRD) is making an important contribution to AVO's response at Redoubt, assessing hydrologic hazards in the Drift River, and we look forward to WRD joining the AVO effort hereafter. Funding for the University of Alaska Geophysical Institute passes through the USGS under the AVO cooperative agreement.

Because of its proximity to the Cook Inlet volcanoes, AVO/Anchorage serves as the center for field operations between and especially during eruptions. When crises like that at Redoubt Volcano arise, AVO's staff and equipment are supplemented by staff and equipment from the USGS' Cascades and Hawaiian Volcano Observatories, and USGS offices in Menlo Park, Denver, and Seattle.

Question: What was learned from the availability of data on the Redoubt eruption? What were the magnitudes of the eruptions (plume size and composition)? How long will this eruptive phase continue at Redoubt?

Answer: Redoubt's current eruption has included alternating explosions and dome growth. By worldwide standards, the explosive eruptions have been of moderate scale, with plumes reaching 30,000- 40,000' above sea level. The initial dome, which grew from December 22-January 2, was unusually large (25 million cubic meters) and grew exceptionally fast. The total volume of magma erupted thus far is probably between 50 and 100 million cubic meters. For comparison, the volume of magma erupted by Mount St. Helens in 1980 was several hundred million cubic meters. The composition of magma now being erupted from Redoubt is very similar to that erupted in the 1960's, a silicic andesite. In such magma, the glass fraction (pertinent to melting in aircraft engines) tends to be more silicic, dacite or rhyolite with a silica content of at least 65 percent and typically between 70 and 77 percent.

The current eruption is more vigorous than that of 1965- 1968. However, we don't know whether this greater vigor will lead to earlier exhaustion or an even longer eruption than in the 1960's. Geodetic and gas monitoring that will be added shortly will help to forecast the longer-range future of the eruption, although there will still be difficult problems of interpretation.

Question: How many active volcanoes of a similar size are there in Alaska? How many volcanoes are monitored in Alaska and with what equipment?

Answer: There are approximately 50 potentially active volcanoes in Alaska of Redoubt's size and type. Of these, 30 have erupted in the past 100 years. Only 5 are presently monitored by AVO--Augustine, Iliamna, Redoubt, Spurr, and Dutton. Pavlof Volcano is monitored (though not in real-time) by the Lamont-Doherty Geological Observatory of Columbia University, and the Katmai volcano group is temporarily monitored by a research project of the USGS. With the exception of tiltmeters and periodic surveys on Augustine, all monitoring is seismic.

Question: Why is it important to study volcanoes? What practical applications are there for data concerning volcanic activity? What resources are needed for this activity in Alaska?

Answer: The USGS' primary goal in studying volcanoes is to provide accurate, timely assessments of volcanic hazards, and thus to protect life and property but not cause undue alarm and disruption of normal economic activity. In effect, our goal is to help communities coexist peacefully with nearby volcanoes.

Practical applications abound because people can, with fore- warning, avoid, control, or manage volcanic hazards. For example, the present difficulty of the Drift River terminal could easily have been avoided if planners had had and used a volcanic hazards assessment. The facility's present site would have been in a high hazard zone and a different site would probably have been selected. Where development is an established fact, people can move out of the way when volcanoes threaten to erupt. A few volcanic hazards can be controlled, e.g., excessive sedimentation downstream from a volcano. Although ashfall can hardly be stopped or avoided, computers, machines, vehicles, etc. can be protected against the abrasive and contaminating effects of ash.

The resources required to assess and monitor hazards from Alaskan volcanoes vary according to the location and frequency of activity on each volcano. Approximately $12.4M startup cost and $9.5M/year would be required to have simple monitoring of all active Alaskan volcanoes and more sophisticated monitoring of those in the Cook Inlet and near other population centers. These costs are high in comparison to costs at the other USGS volcano observatories, principally because Alaska has so many volcanoes, many of which are remote, and because instruments on these volcanoes require extra maintenance and protection against harsh winters.

Question: Is collecting such data cost effective?

Answer: The costs of monitoring are stated above; the benefits of that monitoring are harder to assess but we believe are greater than the costs. Many aircraft have changed course or schedule upon notification from AVO and the FAA to avoid ash and a risk of several tens of millions of dollars damage per encounter with ash, not including human lives. Only one or two avoided encounters with ash would justify the entire AVO operation and the FAA's work in disseminating ash information. Similar arguments could be made for the benefits of environmental protection around the Drift River terminal. The costs of economic disruption and thus the benefits of being able to maintain normal economic activity are especially difficult to estimate, but are thought to be substantial. Normal operation of air commerce and Cook Inlet oil production are obvious examples; other examples include the fishing economy of King Cove near seismically-active Mount Dutton.

Question: Is it worth it to know in real time when an eruption is taking place and what emission is associated with an eruption?

Answer: Yes, because there are actions that can be taken in the minutes and first few hours following an eruption that will substantially reduce physical and economic losses from that eruption. Ash from Redoubt will take 10 minutes or longer to reach the Drift River oil facility and an hour or more to reach Anchorage. During that short "grace period," aircraft can be warned, filters can be added to ventilation systems, computers can be covered and wrapped, etc. Some changes in routine require several hours of lead time for an orderly, economical change -- e.g., notification of an aircraft in Seattle before it departs for Anchorage, movement of military aircraft into hangers, shifting of electrical generation from Beluga to other sites. Similarly, floods in the Drift River take 2-4 hours to move from the volcano to the Drift River oil terminal, during which time crews can stop loading into a tanker, effect an orderly shutdown, and move themselves to safety.

Question: For the Redoubt eruption, I understand USGS, AVO, NOAA, and the FAA have been cooperating by developing a system to provide real-time information to air carriers about volcanic activity and ash plumes associated with that activity. What is USGS' role in this system? What role can USGS play in the future in such a system? What resources are needed to play that role?

Answer: USGS is an integral, indeed leading, part of AVO, and AVO's first role in this system is to provide early warning of eruptions. Seismic monitoring is the most reliable 24-hr-per-day, all-weather method of predicting and detecting eruptions. Once the seismographs indicate that an eruption has begun, AVO's lightning detection system shows if there is a significant amount of ash.

Once an eruption is detected, the USGS works with NOAA, the FAA, and pilot reports to piece together a better idea of the height of the eruption column, its ash content, and the direction in which it is blowing. The USGS has just updated a computer program that uses NOAA data to plot ash trajectories.

The USGS has also contributed substantially to an International Civil Aviation Organization effort to provide training and onboard information for pilots who might encounter volcanic ash. Thus, when a pilot receives a real-time report of ash, he or she should have the training and the onboard reference materials with which to respond. Experience at Redoubt has shown that pilots have, but all are not familiar with, this material, so the USGS will help in the development of widely-circulated, interest-catching items that may point to the materials in the pilots' manuals.

In the future, the USGS and its AVO cooperators can help in several critical matters. First, efforts to develop new methods for detecting ash (e.g., onboard differential radiometry or electrical discharge Stormscopes) require detailed information about the chemical and physical characteristics of ash in various size fractions. The USGS and its cooperators have a wealth of experience in studies of volcanic ash. Second, warnings must indicate how quickly ash will settle out of a plume and the plume will cease to threaten aircraft. The USGS and its cooperators collect ash that falls at various distances from Redoubt, relate its thickness and grain sizes to known wind speeds and directions, and thus develop important information for models of the settling of ash from ash plumes. Third, AVO has a wealth of experience in installing, maintaining, and operating equipment around the sometimes hostile environments of volcanoes. Our scientists and technicians who are already working near Redoubt and other volcanoes can help NOAA and the FAA to install and operate any portable equipment.

The USGS worked closely with the NOAA weather radar station in Portland, Oregon, during the explosive eruptions of Mount St. Helens. We understand that NOAA has requested a newer, state-of-the-art weather radar unit for Anchorage. When this new radar is installed, we will put in a hot line to the Anchorage office just as we have to Portland. We are also keen to work with NOAA radar and lidar (laser instrumentation) experts to explore the feasibility of, and perhaps later to deploy, portable, tunable radar units for detecting ash near any erupting volcano in Alaska.

The USGS would require approximately an additional $1.0 million per year to conduct the above mentioned research and participate actively in this real-time warning system for aircraft. This estimate assumes continuation of funding for AVO's basic volcano monitoring; other funding for NOAA's work on radar, lidar, and satellite systems; and other funding for FAA's efforts.

Question: Given the current level of volcanic activity at Redoubt and other active volcanoes of Alaska, what resources will it take to build a comprehensive system to properly study the volcanoes and be able to provide useful real-time data on the size and composition of eruptions? What resources are needed in FY 1991?

Answer: A comprehensive system to study Redoubt and other volcanoes of the Cook Inlet would cost about $4.0 million per year exclusive of emergency responses to eruptions. The emergency response to Redoubt for FY 1991 would cost $4.0 million if the eruption and our monitoring continues at their present levels through that fiscal year. Thus, $8.0 million would be needed in FY 1991 to handle an ongoing eruption of Redoubt and to establish comprehensive monitoring of the Cook Inlet volcanoes.

If additional volcanoes are also to be studied, the costs would increase according to the number, locations, and activity of those volcanoes. We estimate that, for minimal monitoring in the Aleutians and most of the Alaska Peninsula, greater monitoring in the Cook Inlet and selected other areas, and a mobile observatory capability, plus related topical work such as that on aircraft, AVO would require $12.4 million in the first fiscal year and $9.5 million per year thereafter.

QUESTIONS SUBMITTED BY SENATOR PETE V. DOMENICI

U.S. Geological Survey -- Global Climate Change

Dr. Peck, I am pleased to see ongoing progress on research into the phenomenon of global climate change. The overall FY 1991 budget request includes just over $1 billion to advance implementation of the U.S. Global Change Research program, which is $375 million, or 57 percent, above the 1990 enacted level. The President's request for USGS as the lead agency in this multi-agency research effort is $28.2 million, or $14.9 million more than the 1990 level.

Question: The exhibits you have submitted to the Subcommittee highlight the various major elements of the USGS global change program, which are very helpful.

However, for the record could you briefly highlight the major goals of USGS in the global change initiative?

Answer: The strategy for the USGS Global Change Research Program is: (1) to learn the basic scientific principles underlying various earth processes, (2) to determine how processes based on those scientific principals act in the environment, and (3) to use that knowledge to develop information and methods to help people manage resources and fulfill their role as informed stewards of the environment.

These goals will be met by applying the unique capabilities of the USGS and cooperating with other government agencies, universities, private industry, and other nations wherever possible.

Specific major goals are to:

- Determine how climate changed in the past, what caused those changes and what those changes, in turn, caused in terms of impacts on the biologic communities, water resources availability, and regional climatic zone boundaries. This will also aid in verifying climate by providing a basis of information against which they can be tested in hindcasting mode.

- More accurately define the physical parameters influencing the interaction between the climate and hydrologic systems. This information is used to help develop models to be used by water resource managers in specific river basins (for example the Delaware River Basin which provides water for an estimated 20,000,000 people) during periods of varying climate. This information is also used to help improve our understanding of the importance of some parameters in general circulation climate models (we are currently working with the National Center for Atmospheric Research and the Geophysics Fluid Dynamics Laboratory) thus improving the accuracy of those models.

- Determine the baseline influences of the processes taking place in the solid earth as they pertain to global change. Volcanic emissions put materials into the atmosphere. What is the quantity of these emissions and what will their short and long term influence be? Answering this will provide a baseline to help determine the relative influence of human inputs to the environment. Studying the exchange of nutrients and other chemicals within the environment (particularly the solid earth and hydrosphere) will give detailed insight to portions of the carbon cycle and the influence of the solid earth and the hydrosphere on the gases in the atmosphere. Improving understanding of the quantity of methane (a greenhouse gas significantly more potent than carbon dioxide) trapped in permafrost and its reaction to changes in the heat profile in the permafrost will let us understand the potential influence of slight climate changes acting as triggering mechanisms to significantly increase the atmospheric content of greenhouse gases.

- To determine the portion of coastline change due to changes in sea level and that portion due to other causes; and to determine the affects man has or can have on coastline change as well as the affects that coastline change can have on man. Since the majority of the human population lives within one hundred miles of a coastline, improved understanding of this will certainly provide information for decision makers on appropriate management of coastal areas to protect life, property, and the coastal areas.

- Model the land surface component of the global system. Development of models to describe the behavior of the atmosphere and ocean systems is continuing. The land surface, however, is not yet modeled in an integrated fashion. There are boundary conditions between the land, atmosphere, and ocean systems and these systems must be integrated to ensure an understanding of the complete global system. Therefore, the processes taking place at and below the land surface must be appropriately modeled in order to ensure adequate feedbacks to the atmosphere and ocean models.

- To preserve and share selected sets of land global change data. There are thousands of Landsat scenes that were collected in the early years of the Landsat program. These provide a long term baseline of satellite remotely sensed data. Due to the nature of their storage media they are deteriorating. Much of this data must be saved. In addition, many land data sets will be useful to other scientists. A system must be developed, built and operated to ensure that this data is made available to other scientists so that the government's large investment iis not lost.

Question: Are there particular goals, or program milestones, that USGS wants to achieve as the lead agency for this research initiative? Could you provide the subcommittee with a general timeframe (estimate) as to when USGS would like to achieve these goals?

Answer: Although I am the Chairman of the Committee on Earth Sciences, which has conducted an evaluation of the research being done in light of the research needs to determine the priorities for the necessary research, the USGS is not the "lead agency" in the U.S. Global Change Research Program as the term is usually interpreted. All of the agencies involved have specific scientific expertise and concentrate their research efforts in those areas. The individual agency efforts are linked to the efforts of other agencies in an interdisciplinary and interagency program that I believe is unique. The agencies meet and evaluate the needs of research and try to meet those needs by tapping the unique capabilities of the individual agencies.

The goal of the U.S. Global Change Research Program, as stated in Our Changing Planet: The FY 1990 Research Plan, is: "to gain a predictive understanding of the interactive physical, geological, chemical, biological, and social processes that regulate the total Earth system and, hence establish the scientific basis for national and international policy formulation and decisions relating to natural and human-induced changes in the global environment and their regional impacts."

Some goals that are specific to the USGS portion of the research program include:

- Reconstruct past temperature patterns (winter, summer) for the North Atlantic region during warm intervals 3.0 to 4.0 million years ago. We should complete this by the mid 1990s.
- Provide water resource managers in the Delaware River Basin with models that can be used to manage their resources during times of varying climate. This goal has been partially met and will be completed by the end of FY 1991. To provide that information for three more river basins by the mid-1990s and to continue the program to provide that information to managers of all US river basins in the early 2000s.
- Improve methods for detecting and mapping the extent of permafrost by remote sensing and ground based techniques in order to document changes in permafrost regime that may result from climate change. Permafrost change will affect the amount of methane in the atmosphere. Methods should be developed by the mid-1990s and an understanding of the potential impact of methane release from permafrost regions under a warmer climate regime should follow by approximately two years. By the mid to late 1990s we should have a preliminary assessment of the impact of volcanic emissions on climate as well.

I anticipate that in the mid-1990's we will begin to see many more interdisciplinary models operating that use a much greater variety of information. For example, I anticipate the emergence of regional ecosystem models that use regional climatic information (both historical and model-generated), soils information, hydrologic information from both observations and models, geochemical information, and so on. These, in turn, will provide information to regional and global atmospheric circulation models, which need more detailed information about the interaction of the land and atmosphere, including the physiological characteristics of land vegetation. Regional models are likely to have numerous submodels operating within them, some of which are defined by processes and some of which are defined by geography.

Late in this decade we will begin to obtain information from the Earth Observing System (EOS). These observations will help us both to characterize environmental conditions and processes and to monitor changes in those processes on a global scale. Considerable research will be done on the effective utilization of EOS observations in process modeling. The observations will improve the models and the models will help to improve the observations and define the ways that they will be processed and managed.

Another major goal of the USGS is to develop the Global Land Data and Information System. Implementation and operation of the Global Land Data and Information System will take place through the early 1990's with portions of the system operational in FY 1992 with full operational status in the mid-1990's.

Question: Would you provide the Subcommittee with a table showing the account-by-account breakdown of the FY 1991 USGS global change budget request? Would you compare these figures to amounts provided in each of FY 1989 and FY 1990?

Answer: The FY 1989, 1990, and 1991 funding levels for the USGS global change program (focused scientific program) are displayed in the following table:

(Dollars in thousands)

	FY 1989 Actual	FY 1990 Enacted 1/	Change From 1989	FY 1991 Estimate	Change From 1990
MAPPING					
Global Change Data Systems	--	2,959	+ 2,959	7,092	+ 4,133
GEOLOGY					
Climate Change	1,031	3,001	+ 1,970	9,749	+ 6,748
Coastal & Wetlands Processes	1,000	2,960	+ 1,960	2,936	-24
Subtotal, Geology	2,031	5,961	+ 3,930	12,685	+ 6,724
WATER					
Global Change Hydrology	--	1,951	+ 1,951	6,980	+ 5,029
Core Program Hydrologic Research	1,177	1,149	-28	1,215	+ 66
Water Resources Grants Program	1,123	1,107	-16	223	-884
Subtotal, Water	2,300	4,207	+ 1,907	8,418	+ 4,211
TOTAL, USGS	4,331	13,127	+ 8,796	28,195	+ 15,068

1/ Post-sequester level

Question: Could you provide a similar acount-by-account breakdown of the FY 1991 global change budget request for each of the agencies involved in this research initiative? Would you also compare these figures to amounts provided in each of FY 1989 and FY 1990?

Answer: The breakdown of agency research initiatives included within the global change budget request is outlined in the Committee on Earth Sciences (CES) report, "Our Changing Planet: The FY 1991 U.S. Global Change Research Program". Information concerning account-by-account breakdowns within the agencies is not available at this time. That level of detail is currently being compiled for inclusion in the CES report "Our Changing Planet: The FY 1991 Research Plan" to be released in June 1990.

The table below (extracted from the CES report "Our Changing Planet") outlines the budget by agency of global change research conducted in FY 1989 and by agency by bureau/office in FY 1990 and proposed research for FY 1991.

		Dollars in Millions		
Agency	Bureau	FY 1989	FY 1990	FY 1991
DOC	NOAA	9.0	18.0	87.0
DOE	OHER	20.2	50.0	66.0
DOI	USGS	5.3	13.3	28.2
	DOI			2.9
	BLM			2.1
	FWS			2.9
	MMS			3.0
	NPS			2.3
	WBR			2.3
EPA	ORD	27.4	13.2	26.0
NASA	OSSA	14.5	488.6	661.0
NSF		39.2		
NSF	GEO		54.6	93.6
	BBS		.4	9.4
USDA		18.3		
USDA	ARS		1.1	8.6
	CSRS		4.3	14.4
	FS		15.8	22.9
	SCS			1.5
TOTAL		133.9	659.3	1034.1

U.S. GEOLOGICAL SURVEY -- OGALLALA AQUIFER RESEARCH

In 1986, the Congress passed Public Law 99-662, which established the Ogallala aquifer research and demonstration Program. This Act authorized the expenditure of $65 million over five years to implement innovative and efficient management of this valuable groundwater resource based on recommendations in the Ogallala Aquifer Regional Study completed in 1982.

No funds have been provided under the P.L. 99-662 authority for research and other activities related to the Ogallala Aquifer, which I believe is a serious oversight. The Ogallala Aquifer lies beneath eight states in the High Plains Region -- Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming. This aquifer contains high quality water and as such is being used for consumption, irrigation, and industrial purposes. This valuable water resource needs to be effectively managed and conserved, or we risk depleting it prematurely. I have sponsored legislation (S. 1635) to extend the Ogallala program for three additional years (FY 1992 through FY 1994).

Question: Has the USGS undertaken any activities recently to evaluate the resources of the Ogallala Aquifer?

Answer: The USGS has ongoing ground water data-collection programs in each of the States underlain by the Ogallala aquifer. These programs include monitoring of water levels throughout the area, and developing estimates of ground-water withdrawals for irrigation, public supply, and domestic use. In addition, the USGS is conducting a number of applied research studies in cooperation with a range of State and local water agencies. Through the USGS Regional Aquifer-System Analysis Program, the Ogallala (or High Plains) aquifer was among the first investigated. This study began in the late 1970's and was completed in the early 1980's; in excess of $8.0 million was expended on this appraisal of the regional ground-water system in the High Plains, and over 100 reports addressing a wide range of ground-water issues in this region have been produced.

In addition, the USGS has recently transmitted to the Congress a report titled "Water-level Changes in the High Plains Aquifer Underlying Parts of South Dakota, Wyoming, Nebraska, Colorado, Kansas, New Mexico, Oklahoma, and Texas -- Predevelopment through Nonirrigation Season 1987-88." This report was prepared in response to the requirements of Section 1121 of the Omnibus Water Resources Development Act of 1986 (Public Law 99-662) which amended the Water Resources Research Act of 1984 (Public Law 98-242). The amendment added a new Title III to the legislation which states, in Section 306, that "... the United States Geological Survey ... in cooperation with the States of the High Plains Region, is authorized and directed to monitor the levels of the Ogallala aquifer, and report annually to Congress." In FY 1988, and in subsequent fiscal years, the Congress has appropriated $400,000 to the USGS to carry out the purposes of Section 306. Consistent with Congressional directives accompanying the FY 1988 Interior and Related Agencies Appropriations bill, $300,000 of this amount has been used to collect additional data on ground-water levels through the USGS Federal-State Cooperative Program where costs have been shared with the High Plains States. The remaining $100,000 has been used for report preparation.

Question: Would a significant water resource, such as the Ogallala Aquifer, be included in the National Water-Quality Assessment Program, for which the President requests $11 million in FY 1991?

Answer: Yes, the Ogallala Aquifer would be studied under the full-scale National Water-Quality Assessment Program. The full-scale program envisions conducting investigations in about 60 study units nationwide; because of the size and importance of the Ogallala Aquifer, 5 study units are dedicated to its assessment. One of these study units (in central Nebraska) is tentatively scheduled to begin in FY 1991. When the program reaches full scale in FY 1997, some level of activity will be underway in all five units comprising the Ogallala Aquifer.

Question: The 1986 Act authorized two initiatives -- improved groundwater management through research in conservation and augmentation, authorized at $6.5 million annually; and farm level demonstration projects to encourage the rapid transfer of new technologies for more efficient water use, authorized at $5.3 million annually. I might add that there must be at least a 25 percent non-federal match for these programs. Could you provide to the Subcommittee an estimate of the resources USGS could realistically use in each of these activities in the first year the Ogallala Aquifer research and demonstration program is implemented?

Answer: Much of the research that has been funded under Title I of Public Law 98-242, through the Water Resources Research Institutes and Matching Research Grants Programs, contributes knowledge directly applicable to the resolution of problems associated with the Ogallala Aquifer. Further, the cost-sharing requirements for research grants under Title I programs generate significantly greater non-Federal funding support than would the $3 Federal to $1 non-Federal cost-sharing formula under Title III. The Administration therefore recommends that funding for the areas of research identified in Title III continue to be carried out under existing Title I programs where a more aggressive program of research can be mounted for the same level of Federal expenditure and where problems associated with discriminatory or preferential funding ratios for select regions of the country can be avoided.

QUESTION SUBMITTED BY SENATOR MARK O. HATFIELD

In the Statement of the Managers accompanying the FY 1990 Interior Appropriations Conference Report, a provision was included which requests the Geologic Survey to "conduct a feasibility study on alternate locations for the Deer Creek marine research facility, including, but not limited to the Marine Science Center in Newport, Oregon." Please provide the Subcommittee with a status report on this study.

Also, because Newport's available capacity is relatively small in comparison to Deer Creek, and there is ongoing investigation at Newport regarding hydrothermal activity and seafloor spreading, please provide the Subcommittee with a singular analysis of the feasibility of relocating only Deer Creek's Seafloor Hydrothermal Processes project, which is under the Geologic Division, Office of Energy and Marine Geology. It is my understanding that this project employs approximately six principal investigators and associated support staff, and would be considerably less expensive than moving Deer Creek's entire marine research operation to another location. Furthermore, the opportunity to place all the scientists performing submarine hydrothermal research at one facility would seem to be an attractive possibility, scientifically, and may result in considerable cost savings to the Federal Government.

Question. What is the status of the study on alternate locations for the Deer Creek marine research facility, including, but not limited to the Marine Science Center in Newport, Oregon?

Answer: A committee has been formed and is studying the feasibility of the move to the Hatfield Marine Science Center in Newport, Oregon. The report will be submitted to the Department of the Interior by July 1, 1990.

QUESTION SUBMITTED BY SENATOR RUDY BOSCHWITZ

A bill has been introduced which would require the United States Geological Survey, in consultation with several Federal agencies and the appropriate states, to study the water quality of the Mississippi from its source at Lake Itasca, Minnesota, to the Gulf of Mexico. It further requires that you report the results of this study to Congress by December, 1992.

Question: Is the USGS in a position to undertake such a study, and is a $2 million authorization adequate?

Answer: Yes, the USGS, in consultation with other agencies, is capable of such a study. The USGS initiated studies of the water quality of the Mississippi River below St. Louis, Missouri, in 1987. The annual cost of this ongoing effort has ranged between $750,000 and $1,000,000. These studies, which focus on the sediments, and organic and inorganic compounds present in the river and in the mouths of its major tributaries, have developed significant new data as well as new and improved techniques and methods for data collection and laboratory analysis.

To undertake the Mississippi River water-quality study called for in the proposed legislation, the ongoing work could be extended to the upper Mississippi (above St. Louis) and enhanced by enlarging the suite of constituents being investigated. Expanded cooperation with the Fish and Wildlife Service, the Environmental Protection Agency, the Corps of Engineers, and interested States would further enhance the proposed study and the potential value of the resultant reports. Following this approach, an additional $2.0 million funding level would be adequate to complete an overall Mississippi River water-quality study by December 1992.

SUBCOMMITTEE RECESS

Senator **Reid**. I thank you very much. The subcommittee will stand in recess until 10 a.m., Tuesday, March 6, when we will hear testimony on the Bureau of Indian Affairs and the Indian Gaming Commission.

[Whereupon, at 11:04 a.m., Monday, February 26, the subcommittee was recessed, to reconvene at 10 a.m., Tuesday, March 6.]

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1991

TUESDAY, MARCH 6, 1990

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:35 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Harry M. Reid presiding.

Present: Senators Reid, McClure, Stevens, and Domenici.

DEPARTMENT OF THE INTERIOR

BUREAU OF INDIAN AFFAIRS

STATEMENT OF EDDIE F. BROWN, ASSISTANT SECRETARY

ACCOMPANIED BY:

- **WALTER R. MILLS, DEPUTY TO THE ASSISTANT SECRETARY FOR OPERATIONS**
- **PATRICK A. HAYES, DEPUTY TO THE ASSISTANT SECRETARY FOR TRUST AND ECONOMIC DEVELOPMENT**
- **EDWARD F. PARISIAN, DEPUTY TO THE ASSISTANT SECRETARY AND DIRECTOR OF THE OFFICE OF INDIAN EDUCATION PROGRAMS**
- **KRISTINE M. MARCY, DEPUTY DIRECTOR, OFFICE OF CONSTRUCTION MANAGEMENT**
- **LINDA L. RICHARDSON, ASSISTANT DIRECTOR OF ADMINISTRATION FOR FINANCIAL MANAGEMENT**

OPENING REMARKS OF SENATOR REID

Senator REID. Good morning, Senator Stevens, and Dr. Brown. The meeting will come to order. This is the time scheduled for the Subcommittee on the Department of the Interior and Related Agencies to hear testimony regarding the fiscal year 1991 budget request for the Bureau of Indian Affairs, and, of course, the associated programs for American Indians and Alaska Natives that fall under the jurisdiction of the Secretary of the Interior.

Testifying this morning on behalf of the Bureau will be the Assistant Secretary for Indian Affairs, Dr. Eddie Brown. Today is Dr. Brown's first appearance before the Appropriations Committee, and we welcome you here, Dr. Brown.

As is our custom with witnesses testifying before the subcommittee for the first time, a copy of Dr. Brown's biography will be included in the record. Dr. Brown has one of the most difficult, and challenging jobs in the Department of the Interior.

There are many different voices, including some here in Congress, offering ideas and suggestions about the Government and its relationship with the Indian people. I hope, Dr. Brown, that you will continue to listen to those voices as the Bureau enters the 1990's.

For funds subject to annual appropriation, the budget request for the Bureau of Indian Affairs totals $1,185,178,000. This represents a decrease of $170,542,000, when compared to fiscal year 1990 level.

However, several important points should be noted about this budget request. For the Operation of Indian Programs account, the difference between the fiscal year 1991 request and the fiscal year 1990 postsequester level is just $3,303,000.

If the one-time funding of $54 million provided in fiscal year 1990 for the conversion of tribal contracts to a calendar year basis is discounted, the fiscal year 1991 request is increased roughly $50 million over last year.

This is indeed a change from previous BIA operating budgets submitted to the subcommittee. For the "Construction" account, the decrease of $33,751,000 does represent a significant departure from congressional direction regarding irrigation projects.

For the "Miscellaneous payments to Indians appropriation" account, the decrease of $139,457,000 represents payment of the full cost in fiscal year 1990 of the Puyallup settlement in Washington State, some $77 million, the Federal contribution to the Hoopa-Yurok settlement fund of $10 million, and the first year costs of the Aleutian-Pribilof restitution, the Colorado Ute settlement, and the San Luis Rey requirements.

The budget does request funding of $52.4 million in fiscal year 1991 to meet the second year requirements of the Aleutian-Pribilof, Colorado Ute, and San Luis Rey settlements.

Dr. Brown, when we finish with the other members of the subcommittee, I would invite you to please summarize your statement, since it will be included in the record in its entirety, and then we can proceed directly to questions. Senator McClure.

Senator McClure. I have no opening statement, and I would defer to Senator Stevens.

Senator Stevens. I have none, Mr. Chairman. Thank you very much.

Senator Reid. Gentlemen, I have a long list of questions, and I know that you probably have other things to do, and I would be happy to defer to each of you so that you may ask your specific questions. Senator Stevens.

OPENING REMARKS OF SENATOR STEVENS

Senator Stevens. Well, I do have some specific questions concerning the national resources development activity through the forestry program, Mr. Secretary, and I wonder if you are prepared to comment on the area. Particularly I am concerned as to whether the budget that is before us has enough funding for an inventory to salvage the spruce trees that are affected by beetles in our State.

I am told that a great portion of the ground has been attacked by beetles, and I would like to know what level of funding would be necessary to make an inventory of those infested lands, and whether an intensive harvest management program would better protect them.

If you are prepared to discuss that, I would like to go into that at some length, Mr. Secretary.

INTRODUCTION OF ASSOCIATES

Dr. **Brown**. Mr. Chairman, at this point, let me just make some introductions here, because I think it is important.

My deputies who will be making some of the key administrative directions for this Bureau, are at the table, and will join me in the discussions.

I have with me Mr. Walter Mills, Deputy to the Assistant Secretary for Operations; Mr. Ed Parisian at the end of the table, who is the Director of the Office of Indian Education; Mr. Pat Hayes, who is in the middle here, is Deputy Assistant Secretary for Trust; and at the end I have Kristine Marcy, who is the Deputy Director for the Office of Construction Management; and then to my right is Linda Richardson, Assistant Director of Administration for Financial Management for the Bureau.

I might add that this is not only my first time here, but the majority of us is here, for the first time.

In regard to your question, sir, we do not have that information. I would be happy to get that information and make it available to you, specifically related to the concern that you raised.

ALASKA TIMBER INVENTORY

Senator **Stevens**. Well, I thank you for that, Mr. Secretary, but my information, and I have just come upon this in recent days, is that because of this beetle infestation, there is a tremendous inventory of timber on native lands that will lose its value in a short period of time unless it is harvested.

It gets into some very controversial issues I am sure you recognize, and particularly in our State in terms of any rapid harvesting of timber.

However, I think we need to look at this—to conduct an inventory—and attempt to plan for the management of these infested lands.

If I am informed correctly, Mr. Secretary, the total value of these infested lands will be gone in less than 4 years, but at the present time, even though they are infested, they have substantial values that could be recovered, and if those values were recovered, there could be a reforestation program instituted almost immediately with the moneys that could be brought about.

If we don't act in a short period of time, our native people will lose the value of their lands. In the areas that I am talking about, the interior, that value is substantial. Timber is a substantial part of the value of their assets. Their assets will be literally denuded for a substantial period of time.

I do think that beetle infestation is a crisis matter in other areas, Mr. Chairman, but this is the first infestation we have had of a substantial nature. We are not used to dealing with it, and I believe that the native people need some substantial help to inventory, and develop a plan, and to market that timber, and to start an intensive reforestation program.

It is not—we are not looking at it from the point of establishing timber industries as much as we are trying to establish a short-term program to get the value out of this timber so that it can be put back into the ground as quickly as possible.

So, we would appreciate your help very much. Thank you, Mr. Secretary, and I thank you, Mr. Chairman. That is the only question that I have at this time.

I may want to submit some questions, Mr. Chairman.

[The information follows:]

ALASKA SPRUCE BARK BEETLE INFESTATION

Bureau staff have attempted to estimate the extent of the spruce bark beetle problem on native allotments in Alaska by utilizing information and through cooperation with other Federal agencies. There are approximately 536 allotments, totaling 58,604 acres, that may be affected by this epidemic. Of these lands, 14,000 acres are susceptible to the spruce bark beetle. Our estimates indicate that over 138 million board feet of timber could be killed by the beetles.

AVERAGE GRADE OF BIA STAFF

Senator REID. That would be appropriate. Senator McClure.

Senator MCCLURE. Thank you very much, Mr. Chairman. The Bureau of Indian Affairs has a staff of over 9,000 permanent employees. Of these employees, nearly one-half are at a level of GS–9 or lower.

This is a much larger percentage of lower level employees than within other agencies in the Department of the Interior. Has the grade scale of BIA employees changed over the past few years?

Dr. BROWN. Let me refer to Linda Richardson.

Ms. RICHARDSON. Yes, Senator, it has. As a matter of fact, now 55 percent of our employees are below grade 7, and there has been in the past 8 years a 41-percent decline in the number of employees between grades 9 and 12 in the Bureau, and smaller declines, but still declines at all levels above that, including the executive service.

Senator MCCLURE. And to what do you attribute that change?

Ms. RICHARDSON. Primarily to the requirement—the continuing requirement for absorbing pay increases. When jobs become vacant, there is no money to pay the salaries of the higher grade, then we replace people with lower rated employees, and replace 12's with 7's.

Senator MCCLURE. Have you ever done a productivity analysis to determine what that is doing to productivity?

Dr. BROWN. I am not aware, Senator McClure, of any study that has been done at this point in time.

Senator MCCLURE. I think I would be alarmed if that was happening in my own office, and I didn't have enough money to hire replacements, and I had to hire less people with less qualifications, and I think you would be concerned. Are you?

Dr. BROWN. Yes, sir, I am.

Senator **McClure**. Have you requested the money that is necessary to hire people with higher qualifications?

Dr. **Brown**. We have, in our 1991 budget request, you will see in certain areas that we talk about the internal management of the Bureau, everywhere from Federal acknowledgment to natural resources, to a number of other positions. You are correct in regards to how we keep the technical expertise within the Bureau, particularly as the Bureau moves from a direct service to one of technical assistance, and I think that this importance becomes even greater.

Senator **McClure**. One way that I do it in my own office is to hire fewer people. Have you thought of that as a possibility?

Ms. **Richardson**. Senator McClure, we had a 25-percent decline in the Bureau of Indian Affairs employment over the past 8 years also, and so it is happening both ways.

Senator **McClure**. Is that simply a matter of urgency? Did you request more money? Did you get what you requested?

Dr. **Brown**. In which year?

Senator **McClure**. To address this problem. Where did the cutback come? Did it come in your own requests?

Ms. **Richardson**. Senator, the last 2 years Congress has included language in the appropriations bill requiring all agencies funded by the Interior bill to fully absorb the cost of the pay increases.

So, we, along with everyone else in the Department of the Interior, were required to fully absorb the costs. In fiscal year 1991, we have a request to meet 40 percent of the anticipated 1991 pay costs with an absorption of 60 percent of those costs.

Senator **McClure**. So you did not request more moneys to catch up from past pay increases?

Ms. **Richardson**. No, sir; because the reading of the language is that we are to continue to absorb them, and that it is not just for that year.

Senator **McClure**. You don't always so readily agree with what Congress directs, do you?

Ms. **Richardson**. I didn't used to. [Laughter.]

INSTITUTIONALIZED HANDICAPPED

Senator **McClure**. You requested an additional $800,000, and that is a 56-percent increase, to fund a growing population of institutionalized handicapped students in areas other than the Navajo Reservation.

The population is increasing because of the rise in children born to mothers who are chronic abusers of drugs or alcohol. They are now of school age and must, in some cases, be institutionalized.

Costs for this care have risen and the Bureau has continued to provide minimal care, largely on the Navajo Reservation, since they have the largest population of handicapped students, by holding the contractors at the same daily rate for the past 3 years.

What is the population of handicapped children who need care; and for how many are you currently providing care; and how many will this increase address?

Dr. **Brown**. Mr. Chairman and Senator McClure, we do not have that specific information readily available, but can supply that.

Senator **McClure**. If you would do that then, and provide for the record the analysis by tribe if you will, please.

Dr. **Brown**. Yes, sir.

[The information follows:]

INSTITUTIONALIZED HANDICAPPED PROGRAM

In fiscal year 1990, there are 213 handicapped students in institutions whose care is funded by the Bureau. These students are in 22 private institutions, 3 tribal institutions, and 4 State institutions.

The Bureau has computed the educational cost to be $10,800 per student in fiscal year 1990. The population has been relatively stable for many years. All students are provided services according to their Individual Education Plan. The increase will support the rising cost of those services to medically fragile children as well as the increased costs associated with 6 to 10 additional placements.

The analysis of the students by tribes follows:

INSTITUTIONALIZED HANDICAPPED PROGRAM

Tribe	Number served	Residence	State in which served
Pine Ridge Oglala	5	South Dakota	South Dakota.
Do	1	do	Wisconsin.
Crow Creek Sioux	5	do	South Dakota.
Cheyenne River Sioux	10	do	Do.
Three Affiliated Tribes (Fort Berthold)	2	North Dakota	North Dakota.
Three Affiliated Tribes	1	do	South Dakota.
Yankton Sioux	2	South Dakota	Do.
Lower Brule Sioux	5	do	Do.
Sisseton Sioux	1	do	Do.
Standing Rock Sioux	2	do	Do.
Do	1	do	Do.
Navajo	114	Navajo	Arizona.
Do	37	do	New Mexico.
Do	1	do	California.
Couer d'Alene	1	Idaho	Idaho.
Choctaw	1	Mississippi	Colorado.
Hopi	2	Arizona	Do.
Do	1	do	Arizona.
Pima/Maricopa	4	do	Do.
San Carlos Apache	1	do	Do.
Whiteriver Apache	3	do	Do.
Pima/Gila River	11	do	Do.
Hualapai	1	do	Do.
Cocopah	1	do	Do.
Total students	213		

Note.—Most providers of institutional services continue to provide the care and services to the children at the funding level we are able to provide even though their costs are rising.

INSTITUTIONALIZED CARE PROVIDERS

Senator **McClure**. If costs are set by State Departments of Mental Retardation, how has the Bureau held contractors at the same daily rate?

Ms. **Richardson**. Mr. Chairman, I think in many instances the institutions where we are placing handicapped children are not necessarily State certified institutions. They are tribal institutions.

Senator **McClure**. But the tribal institutions are not covered by the State standards?

Ms. **Richardson**. Not if they are not State certified.

Senator **McClure**. The tribal institutions are not required to be State certified?

Ms. **Richardson**. That's right.

Senator **McClure**. Has the care deteriorated?

Dr. **Brown**. Mr. Chairman and Senator McClure, at this point in time, I would rather defer and get the accurate information on that, and supply that to you.

Senator **McClure**. If you would, and also, as to whether or not, and to what degree you are using private institutions. Well, private or not Federal institutions.

Dr. **Brown**. All right.

[The information follows:]

INSTITUTIONS FOR HANDICAPPED CHILDREN

	Contracted		
	1988	1989	1990
Tribal facilities:			
St. Michaels	X	X	X
Tohatchi Special Education	X	X	X
Chinle Valley School			X
Private institutions:			
Abbott House		X	X
Archdeacon Gilfillian	X	X	
Arizona Baptist Childrens	X		X
Arizona Boy's Ranch	X	X	X
Arizona Children's Home	X	X	X
Bar None Ranch	X	X	
Blackhills	X	X	X
Blackhills Workshop	X		
Charles Hall Youth Services		X	
Children's Home Society	X	X	X
Dakota House		X	X
Devearu, Santa Barbara		X	
Devearu, Scottsdale		X	
Excelsior Youth Center	X	X	X
Guardian Mountain		X	
Jane Wayland Center	X	X	X
Lutheran Social Services	X		
McKennen's	X	X	
Missouri River		X	X
Northern Idaho Boy's Ranch	X	X	X
Okola Alternative School			X
Prehab of Mesa, AZ	X		X
SES Dakota Activity			X
Sky Ranch	X		
Southeastern Mental Health		X	
SW Multi-Correctional			X
Summit Oaks		X	X
Touchstone Community	X	X	X
Valley of the Sun	X	X	X
Vessa Almor	X	X	
Vision Quest	X	X	X
Wyalausing Academy	X	X	X
Yellowstone Boy's Ranch	X	X	X
State institutions:			
Aberdeen School District	X	X	X
Arizona School for the Deaf and Blind	X	X	X
Bismarck School District	X		X
Sioux Falls School District		X	

SUBSTANCE ABUSE COUNSELORS

Senator McClure. The Bureau continues to have difficulty in hiring certified credentialed counselors for substance abuse programs. As a result of this difficulty, you are proposing a reduction of $500,000, or a 21-percent decrease, for this program in fiscal year 1991. A similar decrease was proposed for fiscal year 1990.

The Bureau intends to continue training existing counselors and teachers to provide counseling and instruction. These positions are funded under the ISEP formula.

Has the Bureau compared the effectiveness of these existing counselors, and teachers, et cetera, with a credentialed counselor?

Dr. Brown. There has been no formal comparison at this time, sir.

Senator McClure. Do you have any handle on that at all?

Dr. Brown. At this point in time what we are finding is pretty much what you said. We are having a difficult time recruiting, and we are finding that in order to meet the education standards, one has to be a certified counselor.

In order to be a certified counselor, you have to have a bachelor's degree, plus up to 15, or maybe 24 months of training. We are finding not only are we at the Indian schools having trouble attracting certified counselors, but public schools are as well.

This has raised a real concern in my mind. Not only have I looked at the need to train teachers, and other volunteer personnel to assist in spotting those kinds of concerns and getting the proper referrals made, but how can we begin to look a little more creatively in generating that, or begin to look at how we can change the criteria for the standard.

Senator McClure. Well, there are two sides to that question. One is, sir, is the standard too high?

Dr. Brown. At this point in time, for us to recruit the number of people that we need in those institutions, yes, sir.

Senator McClure. Because they don't exist, or because you can't pay for them?

Dr. Brown. Predominantly as I understand it, given the problems that even public schools are having recruiting those counselors, because right now the field is so new, and there are just not that many people who hold those degrees.

And then when you try to recruit them out to a particularly rural area, then it becomes exceptionally difficult, Senator.

Senator McClure. How do the numbers of counselors at BIA schools and contract schools compare with all schools across the country?

Dr. Brown. In a comparison on that—let me refer to Mr. Parisian. Ed, do we have any statistics on that?

Mr. Parisian. We don't have those statistics, but I can get it for the record.

Senator McClure. Would you, please?

Mr. Parisian. Yes, sir.

[The information follows:]

SUBSTANCE ABUSE COUNSELORS

The Bureau has no data which can be used to ascertain the ratio of students to substance abuse counselors in public schools, so we are unable to provide a comparison of public schools to BIA-funded schools.

SUBSTANCE ABUSE EDUCATION

Senator **McClure**. Section 1121 of Public Law 99-570 requires the BIA to include within the curriculum a program of instruction relating to alcohol and substance abuse prevention and treatment. Does it require the BIA to have counselors?

Dr. **Brown**. No; it does not.

Senator **McClure**. What is the status of BIA curriculum in this area? Are you complying with the law?

Dr. **Brown**. Yes; we are making efforts to comply, and develop a curriculum to get those dollars out to those schools, so that that can be done.

Senator **McClure**. When did that all become effective?

Ms. **Richardson**. The authorization was the Anti-Drug Abuse Act of 1986 for the curriculum development.

Senator **McClure**. But it is not in place yet?

Ms. **Richardson**. There were funds appropriated, Senator, in the fiscal year 1987 supplemental for drug abuse for curriculum development in the Bureau of Indian Affairs Schools.

Senator **McClure**. But you still don't have it in place yet? You said 1986-87, and you say you are developing it?

Dr. **Brown**. I believe, Senator, that it is in place, and we can give you a specific rundown as to exactly what we have going, and to what extent it is, and at a later time we can provide that for you.

Senator **McClure**. If you would do that, please, for the record?

Dr. **Brown**. Yes, sir.

[The information follows:]

CURRICULUM DEVELOPMENT

The Bureau distributed the funds made available for curriculum development to all schools and the schools have included substance abuse education in their studies. The type of course work varies because it is based on local curriculum design. Some schools are using commercially available substance abuse programs; others have revised those programs to meet their students' needs; and some schools have developed their own program, often with tribal input and involvement as some tribes are actively working to reduce the alcoholism rate on the reservations.

JOHNSON-O'MALLEY

Senator **McClure**. You requested a 13-percent decrease, and that is $3.1 million less in fiscal year 1991, for the Johnson-O'Malley Educational Assistance Program.

This amount was added by Congress in the fiscal year 1990 process, and proposed to be deleted by the BIA because of, and I quote, "Basic elementary and secondary education programs are a higher priority."

In fiscal year 1988, the BIA recommended and the Congress adopted, a new formula for distribution of Johnson-O'Malley funds. The 3-year phase-in of new minimum weight factors began in fiscal year 1989, with all States receiving a minimum weight of 1.1.

In fiscal year 1990, the minimum will be 1.2, and is to rise to 1.3 in fiscal year 1991. Does this budget proposal fully fund the formula for each State?

Mr. **Parisian**. We have a table conversion that we can provide for the record based on the 1.3-funding formula.

Senator **McClure**. Does it fully fund the formula? Does the budget proposal fully fund the formula?

Mr. **Parisian**. Based on the Bureau's response, our position on JOM is we requested exactly what we requested in 1989.

Senator **McClure**. Well, that is twice that I have asked the question, and twice you have not answered it. My inference from that is that, no, it does not, and we don't want to say so; is that correct?

Dr. **Brown**. Senator McClure, I think it is because we are not sure. Let us check and make sure that we get back with you with the specific information.

[The information follows:]

Johnson-O'Malley Formula Funding

The Johnson-O'Malley formula is not used to develop a budget estimate, but is used only to distribute appropriated funds. No specific rate per student is authorized by law. The formula considers the per pupil expenditures by the States in determining the allocation of funds. Fiscal year 1991 will be the third and final year of adjustments to the weighting formula which provides all States with a minimum weight of 1.3 times the national average per pupil funding. States with costs above that level will continue to receive additional weights (Alaska—2.2; New York—1.6; and Wyoming—1.36).

Assuming that the number of students served remains constant at 217,283, the number of weighted student units will increase from 287,283 in fiscal year 1990 to 306,131 in fiscal year 1991. Fiscal year 1990 funding per weighted student is $80.93. In fiscal year 1991 the proposed funding per weighted student unit is $67.12. To maintain the fiscal year 1990 funding for each weighted student unit, an additional $4,225,669 ($13.81 × 306,131) would be required.

GAMING COMMISSION

Senator **McClure**. All right. If you would, please. I have a number of questions that relate to actions taken with respect to the Midnite Mine on the Spokane Indian Reservation, and I will not take the time to ask them at this time, and also some questions with regard to the contaminated water at the Sherwood site, and I will submit those for the record.

I have a whole list of questions which I will submit for the record. Linda, you did a good job training staff up here on how to do that.

Although names have been suggested, it is my understanding that there are no members of the National Indian Gaming Commission. In addition, there is not even a staff on board.

There is, however, a proposed budget for fiscal year 1991 requesting a 100-percent increase for the Commission. Why was this budget put together in view of the fact that so little has been done to get that Commission in being, and operating?

Dr. **Brown**. Let me say, Mr. Chairman, and Senator McClure, that early last year names were submitted by the Secretary for two Deputy Commissioners, and it is my understanding that those names are going through White House clearance, and FBI background checks, and it is my hope that we would have a Commission in place by spring.

Based on the law, we cannot expend any of the dollars until a Commissioner is put in place. Therefore, we have not moved in establishing the office until a Commissioner is put into place.

We are assuming that a Commission will be in place this spring and that the dollars can be used in 1990 to get that office in order, and then in 1991, we requested the additional money to get the office up and running.

Senator McClure. Well, I assume that from your answer that none of the fiscal year 1990 funds have been obligated; is that correct?

Dr. Brown. Yes, sir.

Senator McClure. You have proposed an increase, and of this increase, $421,000 are for what is called other services. Can you elaborate on other services and what you anticipate doing with these funds in fiscal year 1991?

Dr. Brown. I cannot at this time, but what—but, Senator McClure, what I would be happy to do is to break that out for you and provide that for the record.

Senator McClure. All right. You had proposed for fiscal year 1990, $277,000 for the same function for other services, whatever that may mean, and I would like your explanation of both of those items in both fiscal years if you would, please.

Dr. Brown. Yes, sir.

[The information follows:]

Object Class Data for the Gaming Commission

The category of obligations called "other services" includes all contractual services such as contracting with the FBI or private investigative companies for criminal background investigations of gaming investors, and contracts for maintenance and services. Other services also include the funds associated with the purchase of computer software, and maintenance costs for computer hardware and software.

INDIAN GAMING ACT

Senator McClure. Mr. Chairman, thank you very much. I appreciate the opportunity to participate. I also welcome you before the committee, and look forward to working with you in what is always difficult, and nearly always contentious.

Senator Reid. Senator McClure, I appreciate very much your attention to the subcommittee. I especially appreciate you asking the questions that you did about Indian gaming, which gives me an opportunity to launch into my first series of questions on Indian gaming.

Now, Senator McClure has mentioned the Indian Gaming Act that was signed into law at the end of the 100th Congress. We are now in the second session of the 101st Congress, and the Senate still has not received nominees for the Indian Gaming Commission.

You have stated that the names were submitted early last year, and that means that we have waited for about 1 year for those names to clear the FBI process; is that right?

Dr. Brown. Yes; I am not sure what the holdup is, sir.

OPERATION OF THE GAMING COMMISSION

Senator Reid. Well, I would ask that you exert whatever pressure which you can with the Secretary to speed this process up.

Once the Commission has been appointed, what is your opinion has to how long it would take for the Commission to be operable?

Dr. BROWN. Once it is appointed to be fully operational, they have to have regulations in place, and we are estimating that will take about 1 year.

However, they are able to perform other functions prior to the regulations, such as the review of gaming ordinances, tribal gaming ordinances, et cetera.

Senator REID. Who is now responsible for implementing the Indian Gaming Act?

Dr. BROWN. In the law, until the Commission is appointed, the Secretary has the authority to carry out interim authority to do that. The Secretary has delegated that to me as Assistant Secretary for Indian Affairs.

Senator REID. Pursuant to the Secretary's order that he issued last February; is that correct?

Dr. BROWN. Yes, Mr. Chairman.

Senator REID. Under what authority is this method of implementation being conducted?

Dr. BROWN. I am not sure of your question, sir.

Senator REID. Dr. Brown, under what authority has the Secretary delegated to you the responsibility to carry out the duties called for in the act?

Dr. BROWN. Pursuant to secretarial order 3133, dated February 15, 1989, the Assistant Secretary of Indian Affairs has been designated the Secretary's authority under the Gaming Act.

GAMING ON THE ST. REGIS MOHAWK RESERVATION

Senator REID. We have received a number of inquiries, and if the Bureau is taking the responsibility of enforcing the provisions of the Indian Gaming Act, what are you doing about the current problems involving Indian gaming on the Mohawk Reservation in New York, which has been in all of the national newspapers, and magazines? What is being done?

Dr. BROWN. The Bureau of Indian Affairs does not have law enforcement jurisdiction there. The State of New York is a 280 State, and the State police covers that reservation.

We have been monitoring the situation closely, and we have met with the three tribal chiefs to discuss the matter. In addition, the eastern area director, and the Solicitor's Office have met with the U.S. attorney for the district of New York, as well as with the FBI, and the New York State Police.

The U.S. attorney, I might add, has successfully prosecuted a number of individuals operating the illegal casinos on reservations.

Senator REID. When did the last meeting take place to which you refer?

Dr. BROWN. We have been having ongoing meetings with the area director and the tribal chiefs. I cannot give you the specific date as to that. The last time that I met with the tribal chiefs must have been approximately 2 months ago.

Senator REID. Has the BIA requested that Federal law enforcement officials enforce the provisions of the Indian Gaming Act on the Mohawk Reservation as you have previously indicated?

Dr. **Brown**. Excuse me, but could you repeat that?

Senator **Reid**. Yes; you explained to the committee that the law there is under the jurisdiction of the State of New York.

Dr. **Brown**. Yes.

Senator **Reid**. And you have further indicated that the U.S. attorney has prosecuted individuals successfully and now they are under appeal?

Dr. **Brown**. Yes.

Senator **Reid**. My question is, has the BIA requested Federal law enforcement officials to enforce the provisions of the Indian Gaming Act?

Dr. **Brown**. We have encouraged, and worked closely with them, yes, sir.

CLASS III GAMING

Senator **Reid**. Do you know whether there are any class III gaming activities taking place on Indian lands when the compact required by the Indian Gaming Act has not been approved?

Dr. **Brown**. According to my information, Mr. Chairman, there are a number of places where that is occurring. Evidently, prior to the passage of the act, class III gaming was occurring on reservations in some States, like in Arizona.

The requirement for the State and the tribes to begin to work together has not happened quickly. As a result, some of the U.S. attorneys have decided to delay action until the State and the tribes have time to sit down and begin to work out those State compacts, and it is my understanding that is beginning to occur.

Senator **Reid**. Dr. Brown, of course that is contrary to law. The law is very specific in that respect. The bill's illegal operations, which were illegal at the time that the act was passed, gives them 1 year to, in effect, cease and desist, or work something out with the State.

And I would ask and direct you to have your office contact the necessary officials and indicate that Congress is watching them, and that it is contrary to law; wherein, in effect, you are just turning your head and saying that this doesn't happen, and we will wait until they work something out.

Because it is illegal to begin with, and the agreement reached was only in an effort to placate some of the parties involved, and that time has long since gone.

Dr. **Brown**. Yes, Mr. Chairman.

LAND ACQUISITION FOR GAMING

Senator **Reid**. There have been reports that Indian groups are attempting to have land taken into trust for purposes of Indian gaming. What is the current BIA policy concerning taking lands into trust for purposes of Indian gaming?

Dr. **Brown**. Our policy is based on the Indian Gaming Act, which allows the tribes, or provides a process for the tribes, to take land which is not necessarily contiguous to their lands into trust for gaming purposes.

However, there are certain restrictions or guidelines put on tribes if they do that. It has to be proven to be in the best interests of the tribe to move in that direction, and they have to have the input of other tribes, as well as the consultation of local governmental officials.

Any decisions made in regards to taking any land in trust must have the concurrence of the Governor of that State as well.

Senator Reid. And you feel that that policy is consistent with the provisions of the Indian Gaming Act?

Dr. Brown. Yes, sir.

USE OF FISCAL YEAR 1990 GAMING FUNDS

Senator Reid. Dr. Brown, Congress provided three-quarters of a million dollars for the operation of the Indian Gaming Commission this year; isn't that right?

Dr. Brown. Yes.

Senator Reid. And you have indicated to Senator McClure that none of these funds have been spent, because you can't do that because of the way your agency interprets the law, namely, until an Indian Gaming Commission is appointed.

Dr. Brown. Yes, sir.

Senator Reid. What is the outlook for hiring the necessary support staff between now and the end of the year?

Dr. Brown. Mr. Chairman, if we can get a Commissioner then I feel that the staff could be quickly hired and processed through the personnel system.

Senator Reid. You have asked for an increase over the 1990 level for 1991, and one-half of this increase has been identified for other services. Can you give us any indication as to the type of activities that these funds would cover?

Dr. Brown. Mr. Chairman, as I indicated to Senator McClure, I do not have that specific information available, but I would be happy to provide it for the record.

Senator Reid. Do you have someone within the agency during this interim period that is overseeing and reporting to you on what is going on now in Indian gaming?

Dr. Brown. Yes, sir; Mr. Chairman, I have two individuals assigned to work part-time on this, Mr. Joel Starr, who had worked on gaming issues prior to the act; as well as Mr. Michael Cox, out of the Solicitor's Office, who has also been very active with the gaming issues.

Senator Reid. Of the increase that we have just spoken of, $200,000 is requested for additional staff support—two auditors, and one staff assistant. Since no staff has yet been hired, do you think that the prospects are that all the authorized positions can be filled in 1990?

Dr. Brown. Again, Mr. Chairman, if the Commissioner was appointed within the next month or so, yes.

Senator Reid. What about 1991?

Dr. Brown. If we can get the Commissioner on board, and get some things moving, I think we can move this very quickly. I might add that I am as anxious as anyone to have that Commission in place, and carrying out their function as determined by the law.

ILLEGAL GAMING OPERATIONS

Senator **Reid**. Dr. Brown, the last statement I will make with regard to this Indian Gaming, and you know I was the Chairman of the Gaming Commission for my State over 4 years, and I think this is an area where a lot of time and attention should be directed, because gaming draws, in many instances, people who are trying to make a quick dollar.

It is very, very difficult to enforce, and I think that this economic boon that some people may think may be there has to be watched very, very closely, or there are going to be a lot of people thinking that they can expect something out of this. Unless there is absolutely direct close supervision, this thing will get away from you before you know what is happening.

I would just ask you again to direct whatever attention is necessary, including calling on law enforcement, because certainly they should be involved.

And I would direct your attention to who is making money from those illegal operations, and it is not the Indians.

WATER RIGHTS NEGOTIATIONS

Dr. Brown, the Appropriations Committee has been faced with considerable costs associated with recent enactment of negotiated water and land settlements. In fiscal year 1990, the Congress enacted $191.9 million for various settlements, and an additional $52.4 million is requested in fiscal year 1991 to carry out these requirements.

I understand that negotiations are underway to seek resolution on other outstanding claims. Is that correct, Dr. Brown?

Dr. **Brown**. Yes; that is correct.

Senator **Reid**. It is my understanding that there are approximately 15 different negotiating teams?

Dr. **Brown**. Mr. Chairman, we currently have 11 in place.

Senator **Reid**. Well, that is almost 15.

Dr. **Brown**. With the potential by the end of this year perhaps to have as many as 20.

Senator **Reid**. Are any of these negotiations close to resolution?

Dr. **Brown**. Yes; there are some. We find that all 11 are at various levels, but we find that 3, namely 2 in Arizona, and 1 in Idaho, could be introduced in Congress this legislative session.

Senator **Reid**. What is the current BIA policy concerning negotiated Indian water settlements?

Dr. **Brown**. The Secretary, as well as the Department, have been very strong in indicating that we support negotiated agreements in those situations where non-Federal agencies or groups, as well as tribes, have requested to sit down and negotiate, and we are making every effort to meet that request.

Senator **Reid**. The reason that I am concerned about that is that the Secretary of the Interior, Secretary Lujan, made a statement on that, and I am confident that the statement he made was taken out of context, but basically he said that he felt that he thought, in effect, there were too many water settlements.

And that is not the position that the Bureau of Indian Affairs advocates is it?

Dr. BROWN. No; it is not. In all of my discussions with the Secretary, who has put the water council together for that very purpose, he supports negotiating agreements and getting those settlements underway.

Senator REID. Dr. Brown, I would also direct your attention—you now have 11 negotiating teams, and going to 20, and that costs money, of course, to enlarge that.

And I would suggest that the concentration be made on the 11, or the 15, or whatever the case might be, so that we can try to resolve some of these, and knock them off one by one.

Is the committee likely to be faced with quick enactment, thereby placing additional burdens on this subcommittee in what is likely to be a tight year, allocation-wise?

Dr. BROWN. As part of our criteria in operations that we have established, for any settlement, it is part of that policy that any settlement authorized in 1990 will be identified in the 1992 budget. So, that is how we are operating at this point, Mr. Chairman.

NEVADA WATER CLAIMS

Senator REID. One of the disappointments that I have, Dr. Brown, and you are new on board, and so certainly it is not all your fault, but we have been working in western Nevada to resolve an issue that has been ongoing for some 80 years, where the Federal Government, as alleged by some, took Indian water.

No matter who is right or wrong in that diversion of water, we have been trying to resolve the water problems now for some 3-odd years through settlement agreements with the Pyramid Lake Paiute Tribe and the Fallon Paiute-Shoshone Tribe in Nevada.

And we are disappointed that the Bureau of Indian Affairs simply has not been active at all in these negotiations. Do you know the reason why that inactivity has taken place?

Dr. BROWN. I cannot give you a specific reason, Mr. Chairman, but prior to the development of the water council, and appointment of negotiation teams, staff resources and capability had been lacking within the Department of the Interior.

We have made a special effort in the last year to get that underway and get that moving so that you will see greater activity and participation in the Bureau, as well as the Department, in these negotiations.

Senator REID. Dr. Brown, I would like you to answer in writing in detail how the BIA has contributed in the efforts to obtain an overall settlement of the water problems in western Nevada.

Dr. BROWN. I would be happy to, Mr. Chairman.

[The information follows:]

WATER PROBLEMS IN WESTERN NEVADA

The Bureau has supported water rights/water resources activities in western Nevada for a number of years. In fiscal year 1990, the Bureau is supporting activities of the Fallon, Pyramid Lake, and Walker River Tribes.

FALLON

In fiscal year 1990, the Bureau provided $246,500 in Water Rights Negotiation/Litigation funds to the Tribe to enable negotiations with the Department relative to implementation of Public Law 95-377, an Act to declare that all right, title, and interest of the United States in two thousand seven hundred acres, more or less, are hereby held in trust for the Paiute and Shoshone Tribes of the Fallon Indian Reservation and Colony, Fallon, Nevada, to promote the economic self-sufficiency of the Paiute and Shoshone Tribes, and for other purposes.

A Departmental negotiation team was appointed for these negotiations which are intended to identify an alternative to the kind of water resources development prescribed by the Act. The Bureau designated a representative to the team. These negotiations are contemporary with tribal efforts to secure appropriate provisions in Senator Reid and Congresswoman Vucanovich's proposed Western Nevada Water Right Settlement bills which would avoid the preclusion of a range of options under the Public Law 95-377 negotiations.

PYRAMID LAKE

In fiscal year 1990, the Bureau provided $40,850 to the Tribe to assess Truckee River quality conditions as may be relative to the settlement of the Tribe's water rights in western Nevada. In addition, the Bureau provided $61,750 to support the tribal water office which addresses water resources management issues, including oversight on implementation of Newlands Project operating criteria and procedures and oversight on the development of water rights settlement provisions such as those provisions contained in Senator Reid and Congresswoman Vucanovich's proposed settlement legislation.

WALKER RIVER

In fiscal year 1990, the Bureau provided $90,250 to the Tribe to conduct an assessment of compliance with a 1930's water rights decree which directly bears upon a substantial portion of the Tribe's water rights in western Nevada.

NEGOTIATING TEAMS

Senator Reid. I would also ask that you provide the committee with a listing of the settlement negotiating teams presently in place, by issue, and then by identifying any additional teams that are anticipated to be started this year.

Dr. Brown. Yes; we will do that, Mr. Chairman.

[The information follows:]

Water Rights Negotiation Teams

The current and potential water rights negotiation teams are listed below:

WATER RIGHTS NEGOTIATION TEAMS

Reservation	Issue	Status
Fort McDowell	Water settlement	Final negotiations.
Gila River	do	Fact finding.
Fort Hall	do	Drafting implementation.
Jicarilla	do	Final negotiations.
Warm Springs	do	Do.
San Luis Rey	Implementation of Settlement Act	Initial discussions.
Fort Belknap	Water settlement	Fact finding.
Northern Cheyenne	do	Do.
Wind River	Jurisdictional	Do.
Lake Roosevelt	Management	Completed.
Fallon	Implementation of Settlement Act	Fact finding.
Potential negotiations		
San Carlos	Water settlement	Team has been formed.
San Xavier	Implementation	Request pending.
Blackfeet	Water settlement	Team has been formed.
Rocky Boy's	do	Do.
Chui-Chu	do	Being considered.

WATER RIGHTS NEGOTIATION TEAMS—Continued

Reservation	Issue	Status
Taos Pueblo	do	Team has been formed.
Fort Berthold	do	Being considered.
Agua Caliente	do	Do.
Duck Valley	do	Requested.
Standing Rock	do	Being considered.

DEPARTMENTAL WATER POLICY

Senator McClure. Chairman, on that, would you yield on that?

Senator Reid. Surely.

Senator McClure. I am concerned about one thing that I think may be happening, and that is that the Department is struggling to find a policy to bring some uniformity to these negotiations.

And I am just wondering if they are not pursuing a will-of-the-wisp, because these are all so very different, and I don't see how it is possible to formulate a single policy that is going to apply to any of the details to any of the settlements.

It would be easy to get a policy that says that it is uniform, and that would only get you started. Well, we can get started without that. It is getting finished that is difficult.

Senator Reid. Senator McClure, that was the point that I made, and I appreciate you making the point better than I did. I think that rather than spending a lot of time coming up with a formula, we would be better off, in effect, to work them out, because every one is different, and whatever guidelines or policies that you set will not apply to every one. I would be surprised if it applied to any two of them.

Dr. Brown. Thank you, Mr. Chairman. We are in and have been in discussion with OMB in setting up some guidelines or some criteria by which it can guide us as our negotiating teams go out and sit at the table, and begin to negotiate.

So, we are not talking about specific kinds of directions that are across-the-board, but we are talking more of general criteria and guidelines that will help us.

Senator McClure. Well, it seems to me that there are only about three of them. One is to get started, and the second one is to hold down the money as much as possible, and OMB will assist you on that, and third is to respect State water rights as much as possible.

It seems to me that those are the three guidelines that really ought to motivate you, and direct you. I don't know what else you could develop.

Now, I am sure that OMB would agree at least with the second one, but I am not sure about the third one, but I just think that we are spending far too much time and effort on something that will produce almost nothing.

Dr. Brown. Mr. Chairman and Senator McClure, I would be happy to provide those criteria that have been in place for the record.

Senator McClure. My staff handed me a fourth criteria. Finish. [Laughter.]

[The information follows:]

CRITERIA FOR WATER RIGHTS SETTLEMENTS

On March 12, 1990, the Department of the Interior published a policy statement entitled "Criteria and Procedures for Participation of the Federal Government in Negotiations for the Settlement of Indian Water Rights Claims." The citation for the published policy statement is the Federal Register, Vol. 55, No. 48, Monday, March 12, 1990, 9223. A copy of the policy statement is attached.

[From the Federal Register, Mar. 12, 1990]

DEPARTMENT OF THE INTERIOR

Working Group on Indian Water Settlements; Criteria and Procedures for the Participation of the Federal Government in Negotiations for the Settlement of Indian Water Rights Claims

AGENCY: Department of the Interior.

ACTION: Policy Statement.

SUMMARY: It is the policy of this Administration, as set forth by President Bush on June 21, 1989, in his statement signing into law H.R. 932, the 1989 Puyallup Tribe of Indians Settlement Act, that disputes regarding Indian water rights should be resolved through negotiated settlements rather than litigation. Accordingly, the Department of the Interior adopts the following criteria and procedures to establish the basis for negotiation and settlement of claims concerning Indian water resources.

EFFECTIVE DATE: March 12, 1990.

ADDRESSES: Comments may be addressed to: Mr. Tim Glidden, Department of the Interior, MS 6217–MIB, 18th and C Streets, NW., Washington, DC 20240.

FOR FURTHER INFORMATION CONTACT: Mr. Tim Glidden, Chairman, Working Group on Indian, Water Settlements, 202–343–7351.

SUPPLEMENTARY INFORMATION: These criteria and procedures were developed by the Working Group on Indian Water Settlements from the Department of the Interior.

These criteria and procedures supersede all prior Departmental policy regarding Indian water settlement negotiations. The criteria provide a framework for negotiating settlements so that (1) The United States will be able to participate in water settlements consistent with the Federal Government's responsibilities as trustee to Indians; (2) Indians receive equivalent benefits for rights which they, and the United States as trustee, may release as part of a settlement; (3) Indians obtain the ability as part of each settlement to realize value from confirmed water rights resulting from settlement; and (4) The settlement contains appropriate cost-sharing by all parties benefiting from the settlement.

Dated: March 6, 1990.

Timothy Glidden,

Chairman, Working Group on Indian Water Settlements.

Criteria and Procedures for Indian Water Rights Settlements

Preamble

Indian water rights are vested property rights for which the United States has a trust responsibility, with the United States holding legal title to such water in trust for the benefit of the Indians.

It is the policy of this Administration, as set forth by President Bush on June 21, 1989, in his statement signing into law H.R. 932, the 1989 Puyallup Tribe of Indians Settlement Act, that disputes regarding Indian water rights should be resolved through negotiated settlements rather than litigation.

Accordingly, the Department of the Interior adopts the following criteria and procedures to establish the basis for negotiation and settlements of claims concerning Indian water resources. These criteria and procedures supersede all prior Departmental policy regarding Indian water settlement negotiations. The criteria provide a framework for negotiating settlements so that (1) The United States will be able to participate in water settlements consistent with the Federal Government's responsibilities as trustee to Indians; (2) Indians receive equivalent benefits for rights which they, and the United States as trustee, may release as part of a settlement; (3) Indians obtain the ability as part of each settlement to realize value from confirmed water rights resulting from settlement; and (4) The settlement contains appropriate cost-sharing by all parties benefiting from the settlement.

Criteria

1. These criteria are applicable to all negotiations involving Indian water rights claims settlements in which the Federal Government participates. Claims to be settled through negotiation may include, but are not limited to, claims:

(a) By tribes and U.S. Government to quantify reserved Indian water rights.

(b) By tribes against the U.S. Government.

(c) By tribes and the U.S. Government against third parties.

2. The Department of the Interior will support legislation authorizing those agreements to which is is a signatory party.

3. Settlements should be completed in such a way that all outstanding water claims are resolved and finality is achieved.

4. The total cost of a settlement to all parties should not exceed the value of the existing claims as calculated by the Federal Government.

5. Federal contributions to a settlement should not exceed the sum of the following two elements:

a. First, calculable legal exposure—litigation cost and judgment obligations if the case is lost; Federal and non-Federal exposure should be calculated on a present value basis taking into account the size of the claim, value of the water, timing of the award, likelihood of loss.

b. Second, additional costs related to Federal trust or programmatic responsibilities (assuming the U.S. obligation as trustee can be compared to existing precedence.)—Federal contributions relating to programmatic responsibilities should be justified as to why such contributions cannot be funded through the normal budget process.

6. Settlements should include non-Federal cost-sharing proportionate to the benefits received by the non-Federal parties.

7. Settlements should be structured to promote economic efficiency on reservations and tribal self-sufficiency;

8. Operating capabilities and various resources of the Federal and non-Federal parties to the claims negotiations should be considered in structuring a settlement (e.g. operating criteria and water conservation in Federal and non-Federal projects).

9. If Federal cash contributions are part of a settlement and once such contributions are certified as deposited in the appropriate tribal treasury, the U.S. shall not bear any obligation or liability regarding the investment, management, or use of such funds.

10. Federal participation in Indian water rights negotiations should be conducive to long-term harmony and cooperation among all interested parties through respect for the sovereignty of the States and tribes in their respective jurisdictions.

11. Settlements should generally not include:

a. Local contributions derived from issuing bonds backed by or guaranteed by the Federal Government.

b. Crediting to the non-Federal share normal project revenues that would be received in absence of a cost share agreement.

c. Crediting non-Federal operation, maintenance, and rehabilitation (OM&R) payments to non-Federal construction cost obligations.

d. Imposition by the Federal Government of fees or charges requiring authorization in order to finance the non-Federal share.

e. Federal subsidy of OM&R costs of Indian and non-Indian parties.

f. U.S. participation in an economically unjustified irrigation investment; however investments for delivery of water for households, gardens, or domestic livestock may be exempted from this criterion.

g. Per-Capita distribution of trust funds.

h. Crediting to the Federal share existing annual program funding to tribes.

i. Penalties for failure to meet a construction schedule. Interest should not accrue unless the settlement does not get budgeted for as specified in item 15 below.

j. Exemptions from Reclamation law.

12. All tangible and intangible costs to the Federal Government and to non-Federal parties, including the forgiveness of non-Federal reimbursement requirements to the Federal Government and items contributed per item 8 above, should be included in calculating their respective contributions to the settlement.

13. All financial calculations shall use a discount rate equivalent to the current water resources planning discount rate as published annually in the **Federal Register.**

14. All contractual and statutory responsibilities of the Secretary that affect or could be affected by a specific negotiation will be reviewed.

15. Settlement agreements should include the following standard language: Federal financial contributions to a settlement will normally be budgeted for, subject to the availability of funds, by October 1 of the year following the year of enactment of the authorizing legislation (e.g., for a settlement enacted into law in August 1990, funding to implement it would normally be contained in the FY 1992 Budget request and, if appropriated, be available for obligation on October 1, 1991).

16. Settlements requiring the payment of a substantial Federal contribution should include standard language providing for the costs to be spread-out over more than one year.

Procedures

Phase I—Fact Finding

1. The Department of the Interior (Department) will consider initiation of formal claims settlement negotiations when the Indian tribe and non-Federal parties involved have formally requested negotiations of the Secretary of the Interior (Secretary).

2. The Department will consult with the Department of Justice (Justice) concerning the legal considerations in forming a negotiating team.

If Department decides to establish a team, the Office of Management and Budget (OMB) and Justice shall be notified, in writing. Justice should generally be a member of any negotiating team.

a. The Department's notification should include the rationale for potential negotiations, i.e., pending litigation and other background information about the claim already available, makeup of the team (reason that Justice is not a member of a team, if applicable), and non-Federal participants in the settlement process.

b. The date of the notification marks the beginning of the fact-finding period.

3. Not later than nine months after notification, a fact-finding report outlining the current status of litigation and other pertinent matters will be submitted by the team to the Department, OMB, and Justice. The fact-finding report should contain information that profiles the claim and potential negotiations. The report should include:

a. A listing of all involved parties and their positions.

b. The legal history, if any, of the claim, including such relevant matters as prior or potential litigation or court decisions, or rulings by the Indian Claims Commission.

c. A summary and evaluation of the claims asserted for the Indians.

d. Relevant information on the non-Federal parties and their positions to the claim.

e. A geographical description of the reservation and drainage basin involved, including maps and diagrams.

f. A review and analysis of pertinent existing contracts, statutes, regulations, and legal precedent that may have an impact on the settlement.

g. A description and analysis of the history of the United States' trust activities on the Indian reservation.

4. During Phases I, II, and III, the Government (through the negotiating team or otherwise) will not concede or make representatives on likely U.S. positions or considerations.

Phase II—Assessment and Recommendations

1. As soon as possible, the negotiating team, in concert with Justice, will conduct and present to the Department an assessment of the positions of all parties, and a recommended negotiating position. The purpose of the assessment is to (1) measure all costs presuming no

settlement and (2) measure complete settlement costs to all of the parties. The assessment should include:

a. Costs presuming no settlement—Estimates for quantifying costs associated with all pending or potential litigation in question, including claims against the United States and claims against other non-Federal parties together with an assessment of the risk to all parties from any aspect of the claim and all pending litigation without a settlement. A best/worst/most likely probability analysis of the litigation outcome should be developed.

b. An analysis of the value of the water claim for the Indians.

c. Costs Presuming Settlement—quantification of alternative settlement costs to all parties. This includes an analysis showing how contributions, other than those strictly associated with litigation, could lead to settlement (e.g., facilities to use water, alternative uses of water, and alternative financial considerations).

2. All analysis in the assessment should be presented in present value terms using the planning rate used for evaluating Federal water resource projects.

Phase III—Briefings and Negotiating Position

1. The Working Group on Indian Water Settlements will present to the Secretary a recommended negotiating position. It should contain:

a. The recommended negotiating position and contribution by the Federal Government.

b. A strategy for funding the Federal contribution to the settlement.

c. Any legal or financial views of Justice or OMB.

d. Tentative position on major issues expected to arise.

2. Following the Secretary's approval of the Government's negotiating position, Justice and OMB will be notified before negotiations commence.

Phase IV—Negotiations Towards Settlement

1. OMB and Justice will be updated periodically on the status of negotiations.

2. If the propsoed cost to the U.S. of settlement increases beyond the amount decided in Phase III, if the negotiations are going to exceed the estimated time (or break down), or if Interior proposes to make significant changes in the Government negotiating position or in the U.S. contribution to the settlement, the original recommendation and negotiating position will be revised using the procedures identified above.

3. Briefings may be given to the Congressional delegations and the Committees consistent with the Government's negotiating position.

[FR Doc. 90-5532 Filed 3-9-90; 8:45 am]

BILLING CODE 4310-[illegible]

WESTERN SHOSHONE LAND JUDGMENT

Senator REID. I say amen to that. Doctor Brown, what is the BIA doing to finalize actions in connection with the Western Shoshone land judgment? As you are aware, this involves numerous States, and it is something that should also be resolved.

Dr. BROWN. As I have reviewed the Western Shoshone judgment situation, we find that this has been very complex, and there have been other judgments as well, and that in order to get this moving you have to have concurrence of all of those involved.

It is my understanding that attempts have been made to bring those groups together. They have also formed a national council. However, those attempts fell short a couple of years ago to reach any kind of settlement.

And most recently we have met with some of the groups, as well as the national committee, to begin to address those concerns to see just how we might begin to bring things to the table.

So, we are, and will be continuing to try and redevelop that situation.

ENROLLMENT SURVEY

Senator **Reid**. Dr. Brown, I had a number of Shoshones come to me, all wanting to settle; and of course we recognize that there should be some overall settlement that will work. Is the Bureau willing to conduct an enrollment survey so that a referendum could be called to determine the position of the Western Shoshone on the provisions of the current judgment?

Dr. **Brown**. Currently, we would not suggest that, for two reasons. One is that traditionally the BIA has not operated in that fashion. We have tried to——

Senator **Reid**. That is all the more reason to do it. [Laughter.]

Dr. **Brown** [continuing]. We have tried to get the entities together and come to an agreement in that regard. Second, to undertake such an effort given the spread of individuals to actually do that, and the time that would actually be taken, we estimate that it would probably take anywhere from 3 to 5 years to do that, and at rather large costs.

I would prefer, Mr. Chairman, to put the time into trying to get these entities to the table and see if we can come to an agreement, rather than expending time and resources in that effort.

Senator **Reid**. But if this matter were ever settled wouldn't you need that for the judgment role any way?

Dr. **Brown**. Eventually it is my understanding, yes, we would need that, and that would eventually have to be done, yes.

Senator **Reid**. So it seems to me that if it is going to take 3 to 5 years to do that, and we are talking about a number of other years like this to work out a negotiated settlement, it would seem to me that we would be saving time, effort, and one concern some of them have is that they are dying off, and so I would suggest that there be some serious consideration given to accomplishing that at the earliest possible date, because it is going to have to be done any way, at least as far as I understand the law.

Dr. **Brown**. Yes; I will definitely follow up on that.

TRUST FUNDS MANAGEMENT

Senator **Reid**. Dr. Brown, BIA's actions with respect to activities undertaken in support of the Secretary's trust responsibilities to American Indians has come under careful and considerable scrutiny lately.

Last year, the conferees included bill language directing that before any funds held in trust for a tribe or individuals be transferred under a third-party contract for the management of the funds, they are to be audited and reconciled to the earliest possible date.

The results of this reconciliation are to be certified by an independent party as the most complete reconciliation of the funds possible, and the tribe or individual for whom the funds are held in trust is to be provided with an accounting of the funds.

I understand that the Bureau has decided to issue a contract for an outside firm to conduct the audit and reconciliations. The request for procurement for these services was issued in February, and the contract is expected to be awarded next month.

What instructions are included in this RFP? For example, will all accounts be audited in fiscal year 1990?

Dr. **Brown**. We have put some general parameters for anyone, or any agency applying for or responding to the RFP. Namely, that they have to have regional offices, in 50 percent of the areas in which the Bureau is located.

They must submit management and reconciliation reports to the Bureau, and that they must use generally acceptable auditing procedures. Paperwork generated during that effort would have to be kept on file for a minimum of 3 years, in which the inspector general or other appropriate parties could have access to it.

In regards to the last part of that question, we do not intend to have all the audits completed in 1990.

Senator **Reid**. It is my understanding that the RFP is geared toward 37 of the nearly 250 tribal accounts; is that true?

Dr. **Brown**. Yes, sir.

Senator **Reid**. None of the individual accounts are included?

Dr. **Brown**. Yes, sir.

Senator **Reid**. Rather than focusing on just the largest accounts, did the BIA consider the possibility of a random sampling of the tribal accounts, and what would be the tradeoffs of this approach?

Dr. **Brown**. We did not consider random sampling, mainly because all of the tribes are listed individually, and we assumed that it would require a 100-percent audit of tribal funds.

We also felt that there would be criticism if we only audited some of the tribal fund.

Senator **Reid**. Of course, under this program they are also not all being audited?

Dr. **Brown**. Under this program, we will audit 100 percent of the tribal funds.

Senator **Reid**. Eventually.

Dr. **Brown**. Eventually, yes. We expect in the years of 1990–91 to complete that tribal fund.

Senator **Reid**. Before issuing the RFP, did the Bureau of Indian Affairs attempt to consult with outside funds management experts regarding these audits and reconciliations?

Dr. **Brown**. Yes; it is my understanding that prior to the contract being negotiated that we did talk with Price-Waterhouse, as well as the Treasury Department, and it was in fact Price-Waterhouse's recommendation that we go with an outside private contractor, and that led us eventually to a new contract.

Senator **Reid**. You will keep the committee informed on these issues. We have provided you $500,000 to aid in the reconciliation efforts just last year. So, we are obviously concerned that as full an accounting as possible be completed.

SAFETY OF DAMS

Senator **Reid**. In December of last year, the Department provided the committee with a report assessing the status of the Dam Safety Program. This was a followup to the inspector general report of last September.

As a major policy and budgetary initiative for fiscal year 1991, you are proposing to transfer the BIA safety of dams program to the Bureau of Reclamation.

The December report indicated that a transfer of the Safety of Dams Program to the Bureau of Reclamation would require a new interagency agreement to provide for overall program direction for BIA dam safety work. Have you accomplished this?

Dr. BROWN. We are in the process of recommending in the 1991 budget the transfer of the Safety of Dams Program.

Senator REID. What role will the Bureau and tribes have in its development of this agreement?

Dr. BROWN. It is very important to take a look at that, because the tribes raised a number of issues.

Namely, would they still be allowed to continue 638 contracting, and not only those that are currently contracting, but new 638 contracts as well, and would they have input in the participation of setting priorities of those dams that would be repaired, as well as actually evaluating work that was done.

They also had some concerns in regard to their relationship with the Bureau of Reclamation. Based on that input, I returned to Washington, and talked with the Secretary and the Bureau of Reclamation, and developed an understanding that an agreement would be put together to address those various areas, and that would keep the Bureau and the tribes as active participants in allowing 638 contracts to continue, as well as new contracts to begin. Tribes and BIA will have input into the prioritization, and evaluation of the work that was being done with the Bureau of Reclamation.

Senator REID. We have some other questions regarding dam safety, and which we will submit to you in writing.

TRIBAL COURTS

The Bureau budget includes base funding to meet the needs of tribal courts, including training, technical assistance, and evaluation services. Do you know on average how many training sessions are provided each year?

Dr. BROWN. There are, I believe, 12 training sessions on an average, and 4 for tribal judges, as well as their support staff, that are actually done each year.

Senator REID. And where are these conducted?

Dr. BROWN. These are conducted in a number of places. We have contracted with the National Judges Training Center, in California, for much of our training.

However, tribes themselves also send their staff to training within the State, or wherever training is or can be provided and they are willing to support their staff to attend.

NATIONAL JUDICIAL COLLEGE

Senator REID. Most judges in this country are trained at the National Judicial College, located in Reno, NV, and I am wondering what experience the Bureau has had in conducting training sessions for judges at the National Judicial College?

Dr. **Brown**. Mr. Chairman, it is my understanding that currently the Bureau has no direct relationship with that institution to provide for training.

However, it is also my understanding that tribes have and do send some of their staff to training at that institution.

Senator **Reid**. Well, the only reason I mention this is because I am familiar with it, because it is in Nevada, but I just wanted to make sure that the Indians are not shortchanged, because they are training judges there 365 days a year literally.

And it would seem to me that the Bureau should take a close look at that, because I am certain that there are some programs that could be developed that would be ongoing for the programs that you send them for training.

For example, I would like you to look at what is the per unit training costs of the National Judicial College compared with other training facilities. Would you do that and submit your answer for the record?

Dr. **Brown**. Yes, Mr. Chairman.

Senator **Reid**. And also do these training facilities offer the same expertise as is available at the National Judicial College.

Dr. **Brown**. Yes, Mr. Chairman.

[The information follows:]

National Judicial College

The National Judicial College in Reno offers residential training for lawyer and nonlawyer judges which range from 1 week to 4 weeks in duration. The sessions consist of general and advanced classes. As a rule, judges must complete one of the general (non-lawyer or lawyer) boot camp type training sessions before taking any other advanced classes. The cost breakdown for fiscal year 1989 per person (room and board included) was as follows: 1 week, $704; 2 weeks, $1,139; 3 weeks, $1,564; and 4 weeks, $2,079.

Transportation to Reno, Nevada and back is not included.

The training contracted for by the Bureau of Indian Affairs for tribal court personnel is provided by the National Indian Justice Center out of Petaluma, California. Sessions are held at various locations throughout the country. The average cost per participant (per diem, room and board) is as follows: Fiscal year 1988, 4-day session, $927; and fiscal year 1989, 4-day session, $990.

Round trip transportation is not included.

The National Indian Justice Center's expertise is primarily in Indian law with a strong emphasis on tribal justice administration. In contrast, the National Judicial College's focus is on developing the administrative, management, and handling skills of judges, and other court personnel.

FEDERAL ACKNOWLEDGMENT PROCESS

Senator **Reid**. Senator McClure, I know, had some questions on Johnson-O'Malley. Did you ask those?

Senator **McClure**. Yes, I did. I asked one.

Senator **Reid**. A funding increase of $500,000 is sought in fiscal year 1990 to expedite the process for extending Federal recognition to tribes. This increase would fund two additional tribal recognition review teams.

How many formal petitions have been submitted to the Bureau?

Dr. **Brown**. From 1978 to date, we have had letters of intent from groups to petition for acknowledgment from 121 groups.

Of that, we have completed processing on 32 of those, that either have been recognized, denied, or otherwise resolved. We had an additional 10 that are currently being considered, and an additional 18 applications that are incomplete.

Senator REID. How many review teams do you have presently?

Dr. BROWN. Currently, we have two review teams, and we are in the process of bringing on another two review teams in 1990, and in 1991, we have a request for two additional review teams.

Senator REID. Are you able to hire the people with necessary experience and qualifications to conduct the recognition reviews?

Dr. BROWN. Mr. Chairman, we have been very successful with the two teams that we currently have, and we do not expect to have difficulty in attracting the type of individuals with the qualifications to fit those positions.

Senator REID. I have been told that you have about 76 petitions that cannot be processed without additional supporting materials. Is this number correct?

Dr. BROWN. Well, there are actually 78. So, there are two additional ones.

Senator REID. And what steps is the Bureau taking to assist in pulling this information together?

Dr. BROWN. We do a number of things, rather than just saying, here, we need this additional information. Our people are involved in assisting in the preparation of the petitions, and we have guidelines on how to prepare it.

We ask them that if they have any questions, to submit their package informally prior to formal submission, and we will be happy to look it over to identify any weaknesses and so forth. So, we do actually a number of things to work with the petitioner groups that are very serious and want to get that information.

Senator REID. How long does the Bureau estimate it will take before these petitions, these 78 petitions, are ready for the next stage of review?

Dr. BROWN. Well, I think it is important to note that once a person requests or gives an intent for a petition, that petition has to be fully documented. Once a petition is fully documented, then it is my understanding that it takes about 2½ years from full documentation to a final determination.

PRAIRIE DOG CONTROL

Senator REID. In fiscal year 1991, the Bureau proposes to conduct the second year of a 5-year program to control prairie dogs on four different reservations—the Rosebud, Cheyenne River, Fort Belknap, and Northern Cheyenne. The total cost over the 5 years is estimated to be about $4 million. Are you aware of the problems with prairie dogs?

Dr. BROWN. Yes, sir.

Senator REID. Well, tell me, because I don't know.

Dr. BROWN. This problem has existed for a number of years, and in the last 5 to 10 years it has gotten progressively worse, to the point that tribes have continually requested that we work with them jointly to address that situation.

If you want specific information, I could refer to Mr. Pat Hayes, who could address that, in regards to the prairie dog issue. Mr. Hayes.

Senator **Reid**. We don't have prairie dogs in Nevada.

Mr. **Hayes**. Yes, sir; the prairie dog infestation problem is primarily located on five reservations; the four that are listed and that you mentioned, plus Pine Ridge. The Pine Ridge Reservation is probably the impetus for the Prairie Dog Program.

The tribe sued the Federal Government a number of years ago for breach of trust responsibility, and they won, which caused the Prairie Dog Program to come into being, and it has been in operation for, I believe, 4 years now.

We are in the final year of the Pine Ridge Prairie Dog Program now, which was a 5-year program.

Senator **Reid**. What does the prairie dog do that is making it a problem?

Mr. **Hayes**. Well, it is a burrowing animal, sir, and it reproduces with great regularity, and very steadily, and they live in towns, and by virtue of being burrowing animals, their homes are underground, but there is a hole on top, which causes problems with livestock when they wander into these holes, and——

Senator **Reid**. How big is a prairie dog?

Mr. **Hayes**. Like a large rat. [Laughter.]

Senator **McClure**. You haven't seen rats like they have around here. [Laughter.]

Senator **Reid**. Congress appropriated $500,000 for this program this year, and the budget identifies a planned program of only $390,000. What wil the remaining $100,000 be used for?

Dr. **Brown**. Mr. Chairman, as mentioned by Mr. Hayes, Pine Ridge has or was the initial one, and that additional $100,000 will be used as kind of a mop up operation of a 5-year program at Pine Ridge in the final fifth year.

Senator **McClure**. Are you through with prairie dogs?

Senator **Reid**. I am through with prairie dogs.

COMPONENTS OF CONTROL PROGRAM

Senator **McClure**. What are we doing about prairie dogs? You said that you had a program, and what is the program?

Dr. **Brown**. Mr. Chairman and Senator McClure, I cannot give you the specifics on the prairie dogs, and since I am from Arizona, we don't have a lot of prairie dogs down there. Let me refer to Mr. Hayes, and see what he has.

Senator **McClure**. Mr. Hayes?

Mr. **Hayes**. Sir, it is in about a three-phase program. The first couple of years of a program is considered to be an attack phase for lack of a better term. That is utilizing poisoned bait, and things of that nature. The second phase of it is sort of a consolidation phase, where we try to consolidate our gains in the war upon prairie dogs; and the final phase is what we term a maintenance phase.

Each of these we feel are necessary to eradicate and bring under control the problems that we have with prairie dogs on the reservations that I mentioned previously.

Senator **McClure**. You didn't really mean eradicate did you?

Mr. **Hayes**. Well——

Senator **McClure**. Do you have the illusion that you are going to eradicate them?

Mr. Hayes. No.

Senator McClure. No matter how much you try?

Mr. Hayes. Yes; the best we can do is control them so that they don't produce such devastating economic results on the reservations.

Senator Reid. There will be additional moneys needed in the maintenance program for years to come; is that right?

Dr. Brown. Mr. Chairman, yes, there will be, but that will be covered during or through the regular funding at the tribe agency level.

NOXIOUS WEED ERADICATION

Senator Reid. A separate 5-year program is proposed for control of noxious weeds on selected Indian reservations. A total of $2 million is proposed for this effort. Give me an idea of which reservations are going to be included in this Noxious Weed Program?

Dr. Brown. Mr. Chairman, we have them on many reservations located within 33 agencies, and we will be happy to share with you a specific list of all of those reservations that are found within that area, and that will also cover a total of 80,000 acres to be treated in fiscal year 1991.

Senator Reid. And you will also in this report give us the—give us an indication of how the money is expected to be spent in these various areas that you will identify?

Dr. Brown. Yes, Mr. Chairman, we will.

[The information follows:]

AREA ACREAGE AND COST ESTIMATE [1] FOR FISCAL YEAR 1991 NOXIOUS WEEDS CONTROL

Area	Acres	Estimated costs
Aberdeen	14,300	$357,500
Billings	16,600	415,000
Albuquerque	12,300	307,500
Anadarko	6,300	157,500
Eastern	600	15,000
Minneapolis	1,000	25,000
Muskogee	3,300	82,500
Navajo	11,600	290,000
Portland	13,600	340,000
Phoenix	400	10,000
Totals	80,000	2,000,000

[1] Cost estimates are based on a unit cost of $25 per acre.

Reservations Served

Fiscal year 1991 weed control funds will be distributed to the following Bureau agencies of the area offices listed above. Some agencies administer more than one reservation:

Aberdeen area agencies.—Sisseton, Fort Berthold, Turtle Mountain, Rosebud, Pine Ridge, Yankton, Fort Totten, Standing Rock, Winnebago, and Crow Creek.

Billings area agencies.—Crow, Blackfeet, Wind River, Northern Cheyenne. Fort Belknap, Fort Peck, and Rocky Boy's.

Albuquerque area agencies.—Southern Ute, Zuni, Mescalero, Jicarilla, Southern Pueblo, Ramah Navajo, Northern Pueblo, and Ute Mountain.

Anadarko area agencies.—Anadarko, Concho, Horton, Shawnee, and Pawnee.

Eastern area agencies.—Seminole and Miccosukee.

Minneapolis area agencies.—Great Lakes.

Muskogee area agencies.—Osage, Okmulgee, Miami, Tahlequah, Ardmore, and Choctaw.

Navajo area agencies.—Navajo Irrigation Program, Shiprock, Eastern Navajo, Western Navajo, Fort Defiance, and Chinle.

Portland area agencies.—Flathead, Colville, Yakima, Nez Perce, Spokane, Warm Springs, Fort Hall, Umatilla, and Northern Idaho.

Phoenix area agencies.—Uintah and Ouray.

IRRIGATION SYSTEMS

Senator REID. During fiscal year 1990, the Bureau plans to undertake a review of its irrigation system program. What is the scope of this review?

Dr. BROWN. The review, which we are hoping to complete by the end of this year, will cover a spectrum of when, how, and why irrigation activity was initiated, and this will be done—we have approximately 150 irrigation projects or systems in place, and so we will do a complete review of that.

We will do an inventory of the physical condition of the completed irrigation works, as well as estimates of operating and maintenance needs.

So, we intend to take a very close look at that over the next short while, Mr. Chairman.

FORESTRY PROGRAM OUTPUTS

Senator REID. Regarding forestry, the estimated accomplishments for forest management inventories and plans changed considerably in the last year. For example, the BIA projected aerial photography would be conducted on 12 reservations in 1989, but the actual photography was only done on 1 reservation.

Also, mapping was anticipated for 19 reservations, but the actual number was only 4 reservations. The same situation is portrayed for field inventories, inventory analysis, and management plans. Why have actual accomplishments been so far below the projections?

Dr. BROWN. Mr. Chairman, let me refer to Mr. Pat Hayes for a response on forestry.

Mr. HAYES. Mr. Chairman, there are a number of reasons as to why actuals differ from that which is projected. One reason is that we contract for much of the work.

We contract either through Indian tribes, or through local contractors around the reservations. Sometimes the best laid plans from these contractors don't go, and that causes us some problems.

We also fund this activity at the tribe agency level, and the budget priorities change from year to year at the tribe agency, and sometimes we plan for something, and the budgeting process at the tribe agency does not meet what we feel is necessary to achieve that level.

And, finally, last year was the second year of a couple of very extreme fire seasons, and with the heavy fire seasons, that pulls off a lot of the forest employees off to do firefighting activities.

Senator REID. Dr. Brown, the one concern I have with that question is, and it was answered quite well, is that I think that this is an example of where there must be better programs set up to monitor contracts by the Bureau of Indian Affairs.

So, I think that this is something that we should be looking at, not only in the mapping and aerial photography, but in other areas as well, to make sure again that contractors are not taking advantage of the Bureau. We don't want that reputation to prevail with respect to moneys.

Dr. BROWN. Yes, sir.

Senator REID. Senator McClure indicated that he had a number of questions, and we also have other members of the committee who will submit questions to you in writing. I also have an extended number of questions, many of which are technical in nature, and I would ask that you submit answers to these questions within the next 3 weeks.

Dr. BROWN. Yes, Mr. Chairman.

Senator REID. You are going to have to be at ease. Senator Domenici is on his way.

[A brief recess was taken.]

INDIAN EDUCATION

Senator REID. All right. Senator Domenici.

Senator DOMENICI. Well, I know that we are late, and I have about six areas to cover. Let me discuss a couple of them, and then I will submit the rest of my questions for the record. I was very pleased some time ago to join with others in providing $500,000 for the convening of a White House Conference on Indian Education.

Could you give the subcommittee a report on the status of the administration's efforts in this regard? Or, if there is some alternative, what it is? Could you also describe the division of responsibility between the BIA and the Department of Education, since you are jointly charged with this undertaking?

Dr. BROWN. Mr. Chairman and Senator Domenici, let me say that there are a number of efforts going on at the Department of Education and the Bureau of Indian Affairs.

I will be meeting very shortly with officials from the White House and the Department of Education to further discuss the timetable in regards to a White House Conference on Aging.

Senator DOMENICI. No; on education.

Dr. BROWN. I mean, excuse me, education. At this point in time there is no specific timetable or specific direction as to how all of this will come to produce a White House Conference on Indian Education.

Senator DOMENICI. Dr. Brown, let me just be sure that we are on the same wavelength. Frankly, we are here, I think, to help.

Dr. BROWN. Yes.

WHITE HOUSE CONFERENCE

Senator DOMENICI. Is there some reluctance to do this conference, either because we don't have enough money—$500,000—or is there something that perhaps could be done in its place? I really don't think that we ought to sit around and expect this conference to get at some of these problems if there is something about the overall setup that you all feel won't work.

Dr. **Brown**. Mr. Chairman and Senator Domenici, let me share with you some of my personal perspectives on this.

As I have visited with tribes and received their input, there has been a real interest in a White House Conference on Indian Education. The question has been just how would that actually happen, and that we not just have another major conference with a report that is going to be a big cheap headline, and then a report that sits on the shelf.

I think that the tribes are at a point right now where they are so concerned and committed about education that they want something that is going to give specific results.

I have to tell you that at this point in time I have concerns as well as to if this is the most appropriate and best way to spend educational dollars, given the dire need in Indian communities.

How do we get dollars closer to the Indian communities, and closer to the idea that Indian people must have local control of their education. If we can accomplish that understanding of local control and create an agenda for a White House Conference on Education, then that is what I am supporting, and that is what I will strongly be suggesting and working toward.

Senator **Domenici**. Well, far be it for me to be giving the administration advice, but if we assume that what I am going to say is consistent with what our distinguished chairman would say, I believe if Congress authorizes a White House Conference on Indian Education and provides $500,000 to carry it out, I think the administration is much better served if sooner rather than later they square with us.

You are not the entire administration, but you are part of it, and if you really don't think the conference is meaningful, and you have some other, better way of doing something, I think we ought to know. I don't think we ought to be waiting for results. I don't think that it is bad advice to ask you to be up front with Congress on this issue.

If you don't do that, in about 6 or 7 months we are going to beat up on you, and it won't be well received to say, well, we didn't think that it would work. I urge that you pass that on to the Secretary. Would you not agree with these concerns, Mr. Chairman?

Senator **Reid**. I certainly would.

Senator **Domenici**. So, I give you that advice for what it is worth.

Dr. **Brown**. Thank you, sir.

CROWNPOINT INSTITUTE

Senator **Domenici**. We have a vocational education problem in Indian country, and our distinguished chairman has been helpful to me with reference to the Crownpoint Institute of Technology in New Mexico.

I am not here to specifically talk about it, other than to suggest to you that in the fiscal year 1990 Interior appropriations bill, with the chairman's help and others, we put in $500,000 in operating assistance for the Crownpoint Institute of Technology in New Mexico.

The total amount for the Institute was $493,000, and it is my understanding that the Gallup Office has received about $470,000, based on a preliminary estimate as to the anticipated sequester under the Gramm-Rudman-Hollings Act.

Could you describe for us, and if you don't know the answer, would you get it for us, how the Department is apportioning the funds that were sequestered pursuant to the fiscal year 1990 Omnibus Reconciliation Act?

When would you expect the remaining funds, which may not be apportioned yet, to be made available? Although this is a serious problem for Crownpoint, it might also be a generic problem.

Dr. BROWN. Mr. Chairman and Senator Domenici, let me have different individuals respond to that, and if there are any additional points that need to be made, then we would be happy to submit those in writing for the record.

Ms. RICHARDSON. Senator Domenici, our original apportionment request to OMB was based on the 5.3-percent sequester. We submitted a reapportionment request at the lower level sequester, after the final budget decisions were made, and that reapportionment was approved last week. We are in the process now of distributing all the remaining differences between the first sequester and the second sequester.

LAW ENFORCEMENT

Senator DOMENICI. All right. I am going to submit three other questions, but I would like to close with one that I think has general ramifications in Indian country. The question has to do with law enforcement.

You and I have had only one opportunity to speak, and although we discussed many issues, I do not believe the issue of responsibility for law enforcement on Indian reservations and Indian pueblos came up.

Let me suggest to you that each of us hear from our Indian people about very, very specific dangerous situations that require additional law enforcement resources. We do what we can.

For instance, we have one Indian group in New Mexico for which the subcommittee provided line-item, enhanced law enforcement money. We have found that it is a very serious problem for that group with its mixed reservation of non-Indian and Indian lands.

The subcommittee does that, and then it has five more requests that there are not enough law enforcement people to handle routine, ordinary, everyday law enforcement activities.

Do you know if there is anything comprehensive BIA has done to evaluate the state of law enforcement needs on tribal and pueblo lands?

Dr. BROWN. Mr. Chairman and Senator Domenici, I am not familiar with a comprehensive evaluation that has been done at this time. However, I will tell you that as I traveled across the United States and talked with tribal governments, almost unanimously every tribe has raised concerns and issues as to their ability to fund at an adequate level the law enforcement in their communities and their growing concern about the population that travels through their reservations. That is and continues to be an escalating concern in the Indian communities.

Senator **Domenici**. Well, again, speaking only for myself, I believe the time is past due to address this serious situation. I am not critical of you, but BIA ought to take a look at this. We have an ad hoc system of meeting some urgent needs of Indian groups for law enforcement resources, and now with a national war on drugs, and other things that we are trying to do, I don't think we can do our job right just waiting around for each of our Indian groups to come in and tell us that they need $85,000 for a police car, two additional law enforcement people, et cetera.

I think you have a rare opportunity to take this on and work with the States to see wherein you can do some joint activities. It is pretty haphazard at this point, and I really recommend that you do something.

Senator **Reid**. Senator Domenici, I didn't bring this up, but you hit a real sore note when it comes to Nevada. We have a number of reservations, and one that comes to my mind is a place called Harrington, NV, and the mayor was in my office this morning.

They have been helping the Indian group there for years, and they literally got slapped in the face when they had one police car burned up yesterday, and last week he told me that one of his police officers was injured with a domestic dispute on the reservation, and he will be out of work for 6 months.

They do not get paid anything for this, and their attorneys have simply told them to stop going there, and there is no fire department there, and there is no police, and so if in fact they do as their lawyers say they should do, and stay out of there, then of course it will save the city of Harrington, and Lyon County money.

But, of course, it is not going to be very good for the Indians there. They have written your office and your predecessor numerous times and get no response, and so I certainly underline and underscore not only the example that I have given, but all over the country there is a rare opportunity to join in doing something that would be good for the Indians, but also with respect to the State.

Dr. **Brown**. Yes, sir.

COMPREHENSIVE ASSESSMENT OF LAW ENFORCEMENT

Senator **Domenici**. So, I leave that with you. I have done what I could for one of our Indian groups, the Pojoaque Pueblo. We will give them additional funding to try and put law enforcement personnel in place. It is a terrible situation, and frankly, I don't think that is the way that we ought to be addressing the issue. I think BIA ought to be looking at the issue in a more overall way. Start with a basic question of what is BIA's responsibility. I mean, should we be furnishing all the law enforcement resources; yes or no? Is it generic or statutory authority that brought us to the current situation? Can you get Indian tribes and pueblos to use some of their own money, or give them more? What about State participation?

I think that these are the kinds of things I would say to you, Mr. Secretary, that will greatly enhance your relationship with the Indian people. We need that during this period of time. They need to know that you are interested in something that is right down home, and that you recognize that this really is a bad situation.

The other thing that you might look at while you are at it is to see if we have treated the Indian people fairly with reference to the funding for the war on drugs. You might find that there is either discretionary money around that could be used, or we failed to include sufficient language for the war on drugs on Indian lands. I will submit three other questions, and I thank you, Mr. Chairman.

ADDITIONAL COMMITTEE QUESTIONS

Senator REID. Thank you very much, and you have added a great deal to the hearing today.

And as we indicated, Dr. Brown, there are a number of questions that all of us are submitting to you, and we would ask that you answer them for the record.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Trust Fund Accounting

Question: Before issuing the RFP, did BIA attempt to consult with outside funds management experts regarding these audits and reconciliations?

Answer: Staff from the Bureau and the Solicitor's Office met with representatives of Arthur Andersen & Company to review the audit and reconciliation process.

Question: What plan does the Bureau have to audit and reconcile the remaining accounts, both tribal and individual?

Answer: The Bureau plans to complete the tribal audits in FY 1991 and to develop an audit strategy for individual accounts which will be conducted in FY 1992.

Question: Is it the BIA's intention to audit 100 percent of both the tribal and individual accounts?

Answer: The Bureau plans to audit 100 percent of the tribal accounts, but we do not believe that it would be cost-effective to audit 100 percent of the individual accounts. We would propose to include in the FY 1992 budget request an audit plan for the individual accounts which the Committee could review.

Question: Dr. Brown, I hope you will keep the Committee informed as this issue evolves. Congress provided $500,000 last year to aid in this reconciliation effort. We are obviously concerned that as full an accounting as possible be completed.

Answer: The Bureau will keep the Committee advised.

Question: Is the $530,000 requested in FY 1991 likely to be sufficient to conduct an audit and reconciliation of the approximately 200+ accounts, when the $500,000 appropriated in FY 1990 will, as I understand it, allows for the audit of only 37 accounts?

Answer: We anticipate the audit of the 37 accounts and the reconciliation of the differences between the finance and investments systems to cost approximately $950,000 this year. This will be funded within the trust fund contract line, as the contract will not be fully operational during FY 1990. The estimate for FY 1991 is $1.5 million, which is the amount we are using this year plus the requested increase.

Question: Will a separate RFP be developed and awarded to comply with the requirement that an independent firm certify the results of the audit and reconciliation?

Answer: No, it will not, as the audit work itself is being conducted by an independent firm. In general, audit firms will not certify work they have not themselves conducted.

Question: What steps will be taken to comply with the language regarding reporting the results of the audit and reconciliation to the affected tribes and individuals?

Answer: Written reports from the auditor will be provided to each tribe, and we also anticipate that exit conferences will be held with the affected tribes. Reporting to individuals will be addressed in our audit plan for those accounts. We anticipate that the language will need to be modified with respect to individuals, as in a number of cases the account holder is either a minor child or a legally incompetent adult.

Question: What are BIA's plans with respect to transfer of the funds under the Security Pacific contract pending completion of all the audits?

Answer: The Bureau does not read the language as requiring that all audits be completed before any funds are transferred -- only that the funds transferred be audited. Once the audit of a tribal account is completed and the results have been made available to the tribe, we intend to transfer those funds to the contractor.

Question: What if an audit is complete while inquiries are still underway regarding the technical sufficiency of the contract? Will you still proceed?

Answer: We will proceed when we are satisfied that the system meets our requirements. It should be pointed out that the Bureau's current finance system has not been certified since 1982, therefore, if we retain investment and reporting functions for any extended period of time following an audit, we may well be requested to conduct yet another audit before transferring funds.

Question: What strategy has the Bureau developed for dealing with the issue of auditing the Individual Indian Money (IIM) accounts?

Answer: To date, we have had discussions with staff from the Solicitor's office and with a private audit firm on an appropriate approach to the IIM accounts. We have not yet developed an audit strategy, but we plan to outline our audit plan for IIM accounts as part of the FY 1992 budget.

Question: How does the Bureau propose to manage the IIM accounts without exposing the government to a suit for breach of trust responsibility?

Answer: There is no management or data system which can ever entirely protect the government from lawsuits. The Bureau has taken actions to centralize responsibility and accountability into a single unit; to request increased staff resources; and to continue to secure regular outside financial audits of the trust fund activity.

Question: What is the Department's policy with respect to reimbursement of the trust accounts for the approximately $17 million which has been lost or misappropriated?

Answer: The $17 million represents the differences shown in the investments system and the finance system, which are not integrated systems. As a first step, we need to determine what amount of the difference is simply a result of data entry errors and what amount represents actual loss. The Bureau will contract for auditing services in this area. This discrepancy has been reduced to approximately $40,000.

For those seven known instances where there has been an actual loss due to the failure of the institution in which the funds were invested, the Solicitor has recommended that we prepare findings and determinations for each of these instances so that an appropriate decision can be made on reconstituting the trust funds.

Question: In justifying private sector involvement in managing trust funds, the BIA cited the need to safeguard investments, maximize earnings through cash concentration, and improve reporting to all account holders. My understanding is that the Individual Indian Money (IIM) accounts are proposed for removal from the management contract for this year since the audits won't be completed until some time in the future. What consequences does this change of direction have on the Benefit-Cost Analysis conducted prior to execution of the trust fund accounting contract?

Answer: The IIM accounts are not being removed from the contract. We are proposing, however, that that portion of the accounting system for IIM accounts not be brought up this year because we will not have conducted the required audits. Reporting and accounting for IIM funds remains one of the contract terms, but it is a requirement we are not exercising during FY 1990. Therefore, there is no long-term impact on the benefit-cost analysis. When the contract is fully operational, the benefit-cost analysis will be valid.

Question: Will the projected savings occur?

Answer: The "savings" were the difference between the government's bid under the A-76 process and the contractor's bid. They do not represent a savings in what the Bureau was actually spending for financial trust services, but simply the difference between what it would cost the contractor and the government to provide improved services.

Question: How does this decision affect the accounting requirements of the contract?

Answer: The accounting requirements remain unchanged, it simply alters the timetable to bring up the entire system.

Question: Are other modifications to the Security Pacific contract contemplated?

Answer: It may be necessary to write more specificity into the contract with respect to accounting requirements for IIM accounts.

Question: What efforts has the Bureau put forth to consult with appropriate accounting, investment, or cash management expertise before entering into or modifying the contract?

Answer: The Bureau contracted with Price-Waterhouse in the early 1980's. They recommended that the Bureau seek assistance from the private sector for the management and investment of trust funds. We have also had extensive discussions and correspondence with Treasury on this matter.

Question: What justification does the Bureau use for including the investment service in the same contract as the cash management services? Do other Federal entities, such as the Smithsonian, handle their investments in a similar manner?

Answer: The Smithsonian is not similar to the Bureau, as the Smithsonian is the owner of all of its money -- we have 290,000 different owners. Further, the Smithsonian is not limited by law, as is the Bureau, to invest only in those instruments which are 100 percent guaranteed for both principal and interest. Investment advisory services and accounting services will be handled by two separate subcontractors under the existing contract.

Question: Wouldn't it be prudent to consult such expertise before proceeding?

Answer: As mentioned earlier, the Bureau did contract with Price-Waterhouse to obtain professional advice prior to proceeding with the contract.

Question: Has the Bureau consulted with other Federal agencies, such as Education, Labor, or Treasury, who also must exercise considerable funds management, regarding the structure and operation of their management systems?

Answer: We have worked with Treasury on the accounting and reporting requirements for the differing fund groups.

Safety of Dams

Question: As a major policy and budgetary initiative, you are proposing in FY 1991 to transfer the BIA safety of dams program to the Bureau of Reclamation (BOR). What actions has BIA taken to address the concerns raised in the Inspector General's report regarding ongoing maintenance of dams on Indian reservations?

Answer: The Inspector General (IG) raised three primary areas of concern relative to maintenance of dams: 1) the need to determine responsibility for the maintenance of each dam and the implementation of routine maintenance program; 2) distribution of safety of dam examination reports and the establishment of follow-up procedures to ensure correction of routine maintenance problems, and 3) establishment of routine periodic maintenance as a long term commitment with sufficient funding requested to ensure its accomlishment.

BIA is consulting with tribes to determine responsibility. It has formulated a maintenance program and is implementing it. BIA Area Directors have been directed to distribute the Safety of Dams evaluation reports. The BIA is developing a program to establish follow-up procedures. We are scoping the need for this program and anticipate future budget requests for implementation.

Question: Who has responsibility for this maintenance?

Answer: The Bureau has responsibility for dam maintenance.

Question: Will the responsibility for ongoing maintenance remain in BIA even if the safety of dams program is transferred to the Bureau of Reclamation?

Answer: Yes, even with a transfer of Safety of Dams to BOR, the Bureau will still be responsible for dam maintenance.

Question: The December report identified the establishment of an "operation and maintenance" activity that would be used primarily for dam safety maintenance. Are funds requested in support of this initiative? If so, in whose budget?

Answer: No, funds are not included in the FY 1991 budget request for this initiative pending determination of the annual requirements.

Question: Before proceeding down this path, one would assume that the Department would have a systematic, orderly workplan for addressing the most critical maintenance needs, in addition to ongoing efforts to address the high and/or significant hazard dams that are in poor or unsatisfactory condition.

But, the report indicates that the evaluation process has not, for the most part, progressed beyond the initial safety evaluation report (known as the SEED report) for the majority of the dams, and that reliable estimates will require further evaluation. What workplan has the Department developed for conducting the necessary evaluations beyond the SEED reports?

Answer: The most critical maintenance needs are associated with the same high and significant hazard-potential dams in unsatisfactory and poor condition. The point of the Bureau's initiative is to prevent the relatively fair condition dams from further deteriorating and to have some means of maintaining the dams which are to be rehabilitated by the dam safety program.

On July 18, 1989, when the Bureau transmitted its response to the draft IG audit report, a long-term work-plan was submitted along with the narrative response.

Question: What is the estimated completion date for these evaluations?

Answer: According to the Bureau's primary consultant, the BOR, the process from SEED evaluations to the initiation of corrective action construction takes about 36-40 months, not including construction time. The four, main stages of corrective action work after the SEED report are, in order, deficiency verification analysis (DVA), conceptual designs, final designs and corrective action construction. This means that the 30 dams in unsatisfactory and poor condition are at different stages in the process and with varying completion dates. Some are in verification analysis, some in conceptual design, and others are in final design stage.

Question: At present, nearly all of the Bureau's Safety of Dams work is conducted by the Bureau of Reclamation on a reimbursable basis. Is an administrative cost reduction taken off of these funds when they are made available to the Bureau of Reclamation?

Answer: Yes, the Bureau of Reclamation charges a 35% overhead rate.

Question: What has been the average percentage reduction for these purposes?

Answer: The BOR's administrative cost recovery rate is approximately 35 percent of its personnel compensation and benefits. BOR does not levy an administrative cost rate on such costs as contracts and travel.

Question: Does this exacerbate further the program difficulties of the Bureau safety of dams program?

Answer: No, difficulties with the Safety of Dams Program are not increased as the result of the administrative cost rate assessed by the BOR.

Question: How does this administrative rate compare for other safety of dams work conducted by the Bureau of Reclamation? By other bureaus within the Department?

Answer: The Bureau understands that the BOR assesses the same administrative cost rate to all its clients, except foreign governments. The administrative cost rate assessed by other Bureaus within the Department is approximately 16 to 18 percent of total costs including contracts and travel.

Question: Due to severe fires in recent years, the Department has had to transfer unobligated balances within the Department to meet emergency fire-fighting needs. Has the Department conducted any analysis of the affect of exercising its emergency transfer authorities (Section 101 and Section 102) on the conduct of the Bureau safety of dams program?

Answer: The Bureau is not aware of an analysis having been conducted to determine the affects of exercising the emergency transfer authorities on the safety of dams program. The funds transferred for fire are unobligated balances and represent projects not yet ready for obligation.

Question: Are other Bureau safety of dam programs similarly affected?

Answer: No. The pace of safety of dam programs in the Fish and Wildlife Service and the Parks Service have not been affected by the transfer of funds for fire.

Question: To what do you attribute the presence of large unobligated balances in the Bureau's safety of dams program?

Answer: The unobligated balances are attributed to the delays during the negotiation process to contract safety of dams projects with tribes.

Tribal Courts

Question: The Bureau budget includes base funding to meet the needs of tribal courts including training, technical assistance and evaluation services. What is the average cost of each of these training sessions?

Answer: The average cost of each of these training sessions is:

FY 1988 - $46,368

FY 1990 - $49,535

FY 1990 - $42,036 (projected FY 1990 based on contract award of $672,580 with average enrollment of 70 people.)

Question: How do the per unit training costs of the National Judicial College compare with other training facilities?

Answer: The National Judicial College in Reno offers residential training for lawyer and non-lawyer judges which range from 1 week to four weeks in duration. The sessions consist of general and advanced classes. As a rule, judges must complete one of the general (non-lawyer or lawyer) boot camp type training sessions before taking any other advanced classes. The cost breakdown for FY 1989 per person was as follows:

1 week (room & board included)	$ 704
2 week (room & board included)	$1,139
3 week (room & board included)	$1,564
4 week (room & board included)	$2,079

Transportation to Reno, Nevada and back is not included. There are no other known training facilities which offer a residential program like the National Judicial College. The training contracted for by the Bureau of Indian Affairs for tribal court personnel is provided by the National Indian Justice Center out of Petaluma, California. Sessions are held at various locations throughout the country, e.g., Lake Tahoe, New Orleans, Portland, Phoenix and Albuquerque. The average cost per participant is as follows:

FY 1988 - 4 day session (per diem, room & board) **	$927
FY 1989 - 4 day session (per diem, room & board) **	$990

** Round trip transportation not included.

Based on this information on the per unit training costs, the National Judicial College appears to cost less than the training offered by the National Indian Justice Center. (comparison of one week and four day session only).

Question: Do these other training facilities offer the same expertise as is available at NJC?

Answer: The National Indian Justice Center's expertise is primarily in Indian law with a strong emphasis on tribal justice administration. The curriculum, while comprehensive, is not designed to provide new judges or other court personnel a "hands on" approach to dispensing justice. The practical aspects of sitting on the bench and handling cases are not taught. Training in an area, (e.g., criminal law) is designed to review and instruct on base principles, policies and the present status of the law. Day-to-day situations commonly encountered by court personnel are not covered.

In contrast, the National Judicial College's focus is on developing the administrative, management and handling skills of judges, and other court personnel. This training is further supplemented by a variety of advanced operations.

Question: What has been the turnover rate of judicial personnel in tribal court systems over the last five years?

Answer: The Bureau has no statistics on the turnover rate of tribal judicial personnel. However, since the tribal courts depend heavily on Bureau of Indian Affairs funding for court operation and maintenance, it is apparent that the turnover rate is high.

Question: What actions has BIA taken to help reduce this turnover rate?

Answer: Supplemental funds are provided directly to tribal courts for special needs. Although this funding is not intended to continue indefinitely, every effort is made to assist the respective tribal court to identify additional resources.

Johnson-O'Malley Educational Assistance

Question: Once again, the Bureau proposes to reduce the funding available for Johnson-O'Malley Educational Assistance, despite an increase of 5.6 percent in the number of students participating in the program from FY 1989 to FY 1990. Dr. Brown, wouldn't you agree that providing a sound education for our youth is essential? Then why propose a decrease in a program where the service population is growing?

Answer: The Johnson-O'Malley Program is a supplemental program for Indian children attending public schools. While I certainly support a sound education for all Indian children, the Bureau assigns a higher priority to the basic elementary and secondary education programs funded by the Bureau of Indian Affairs. The public schools are eligible to receive funds from other supplemental education programs administered either by the Department of Education or through the states in which they are located.

Question: What number of students does the Bureau project will participate in JOM during FY 1991?

Answer: The increased number of students served by JOM in 1989 and 1990 was a result of the change in definition of eligible Indian students. We do not expect this trend to continue. Since student count is not taken until October, the budget is based on enrollment at the FY 1990 level.

Question: What funding is necessary to maintain the same rate per student in FY 1991 as was provided in FY 1990?

Answer: Assuming that the number of students served remains constant at 217,283, the number of weighted student units will increase from 287,283 in FY 1990 to 306,131 in FY 1991. FY 1990 funding per weighted student is $80.93. In FY 1991 the proposed funding per weighted student unit is $67.12 To maintain the FY 1990 funding for each weighted student unit, an additional $4,225,669 ($13.81 x 306,131) would be required.

Question: Please provide a distribution of projected JOM dollars for FY 1991 using a minimum weight factor of 1.3 and assuming funding at the FY 1990 level.

Answer: See Attachment A.

ATTACHMENT A

FY 1991 JOM FUND DISTRIBUTION BY STATE

COLUMNS		*(1)	**(2)	(3)	(4)	(5)	(6)
STATE	AREA	STATE AVER. PER PUPIL COST	STATE WEIGHTING FACTOR	NUMBER OF STUDENTS SERVED	WEIGHTED STUDENT UNIT (2) X (3)	STATE JOM PER STUDENT AMOUNT (2) X $67.12	STATE ALLOCATION (5) X (3)
ALASKA		$8,253	2.20	25,296	55,651	147.66	$3,735,100
	JUNEAU		2.20	24,882	54,740	147.66	$3,674,000
	PORTLAND		2.20	414	911	147.66	$61,100
NEW YORK		$6,011	1.60	2,158	3,453	107.39	$231,700
WYOMING		$5,114	1.36	1,315	1,788	91.28	$120,000
CONNECTICUT		$4,743	1.30	36	47	87.26	$3,100
RHODE ISLAND		$4,667	1.30	393	511	87.26	$34,300
OREGON		$4,141	1.30	2,474	3,216	87.26	$215,900
MONTANA		$4,091	1.30	9,273	12,055	87.26	$809,200
	BILLINGS		1.30	8,339	10,841	87.26	$727,700
	PORTLAND		1.30	934	1,214	87.26	$81,500
MICHIGAN		$4,176	1.30	3,533	4,593	87.26	$308,300
WISCONSIN		$4,168	1.30	5,133	6,673	87.26	$447,900
WASHINGTON		$3,881	1.30	6,627	8,615	87.26	$578,300
COLORADO		$3,975	1.30	866	1,126	87.26	$75,600
MINNESOTA		$3,961	1.30	7,963	10,352	87.26	$694,800
	ABERDEEN		1.30	61	79	87.26	$5,300
	MINNEAPOLIS		1.30	7,902	10,273	87.26	$689,500
KANSAS		$3,829	1.30	631	820	87.26	$55,100
IOWA		$3,619	1.30	586	762	87.26	$51,100
	ABERDEEN		1.30	352	458	87.26	$30,700
	MINNEAPOLIS		1.30	234	304	87.26	$20,400
NEBRASKA		$3,634	1.30	2,117	2,752	87.26	$184,700
	ABERDEEN		1.30	2,108	2,740	87.26	$183,900
	ANADARKO		1.30	9	12	87.26	$800
NORTH DAKOTA		$3,481	1.30	3,210	4,173	87.26	$280,100
CALIFORNIA		$3,563	1.30	4,356	5,663	87.26	$380,100
	PHOENIX		1.30	562	731	87.26	$49,000
	SACRAMENTO		1.30	3,794	4,932	87.26	$331,100
FLORIDA		$3,529	1.30	487	633	87.26	$42,500
NEW MEXICO		$3,195	1.30	32,655	42,452	87.26	$2,849,400
	NAVAJO		1.30	20,287	26,373	87.26	$1,770,200
	ALBUQUERQUE		1.30	12,368	16,078	87.26	$1,079,200
MISSOURI		$3,189	1.30	9	12	87.26	$800
OKLAHOMA		$3,146	1.30	44,775	58,208	87.26	$3,907,000
	ANADARKO		1.30	11,349	14,754	87.26	$990,300
	MUSKOGEE		1.30	33,426	43,454	87.26	$2,916,700
ARIZONA		$3,093	1.30	42,326	55,024	87.26	$3,693,300
	NAVAJO		1.30	24,445	31,779	87.26	$2,133,000
	PHOENIX		1.30	17,881	23,245	87.26	$1,560,300

FY 1991 JOM FUND DISTRIBUTION BY STATE

COLUMNS		*(1)	**(2)	(3)	(4)	(5)	(6)
STATE	AREA	STATE AVER. PER PUPIL COST	STATE WEIGHTING FACTOR	NUMBER OF STUDENTS SERVED	WEIGHTED STUDENT UNIT (2) X (3)	STATE JOM PER STUDENT AMOUNT (2) X $67.12	STATE ALLOCATION (5) X (3)
NEVADA		$3,440	1.30	3,296	4,285	87.26	$287,600
MAINE		$3,472	1.30	231	300	87.26	$20,200
SOUTH DAKOTA		$3,051	1.30	11,006	14,308	87.26	$960,500
NORTH CAROLINA		$2,982	1.30	295	384	87.26	$25,700
LOUISIANA		$3,187	1.30	117	152	87.26	$10,200
ALABAMA		$2,565	1.30	448	582	87.26	$39,100
IDAHO		$2,484	1.30	1,930	2,509	87.26	$168,500
	PORTLAND		1.30	1,856	2,413	87.26	$162,000
	PHOENIX		1.30	74	96	87.26	$6,500
UTAH		$2,390	1.30	3,009	3,912	87.26	$262,600
	NAVAJO		1.30	2,114	2,748	87.26	$184,500
	PHOENIX		1.30	895	1,164	87.26	$78,100
MISSISSIPPI		$2,362	1.30	470	611	87.26	$41,000
TEXAS		$3,298	1.30	393	$511	87.26	$34,300
	ANADARKO		1.30	226	294	87.26	$19,700
	ALBUQUERQUE		1.30	167	217	87.26	$14,600
TOTALS				217,414	306,131		20,548,000

*State Average Per Pupil Cost is provided by the "Center for Education Statistics Average Daily Attendance, Current Expenditures, and Exclusions for P.L. 97-35 Purposes - 50 States and District of Columbia." National Average Per Pupil Cost is $ 3,752.

** This table reflects the third phase-in period of the distribution formula recommended by the Assistant Secretary of Indian Affairs and enacted in Public Law 100-46. The authorizated minimum weight factor for FY 1990 is 1.30.

Available Funding : $20,548,000 Per Weighted Student Unit : $67.12

Continuing Education

Question: For FY 1990 and FY 1991, what is the average funding provided, per student, for students at Haskell Indian Junior College and the Southwestern Indian Polytechnic Institute? How does this compare with the tribally controlled community colleges for the same years?

Answer: Haskell and SIPI are 24 hour, full service academic and residential colleges and provide additional programs and services to their students which are not normally provided to students attending non-residential community colleges such as the Tribally Controlled Community Colleges (TCCCs).

After isolating the costs of such additional programs/services from Haskell and SIPI expenditures, a more accurate comparison can be made between FTE student costs of Haskell and SIPI. Using the same method used to compute the yearly Indian Student Count for TCCCs (total credit hours ÷ 12), estimated FY 1990 and 1991 average funding levels per FTE students for Haskell and SIPI are as follows:

	FY 1990	FY 1991
HIJC	$1,859 per FTE student	$2,129 per FTE student
SIPI	$1,750 per FTE student	$1,755 per FTE student

Question: Is this a fair comparison, or should other factors be considered?

Answer: The Bureau does not believe it is a fair comparison to compare the post secondary schools with the tribally controlled community colleges. The TCCC's operate under different regulations, they have the opportunity to receive private donations, charge tuition and have access to the endowment funds. The two post secondary schools are funded entirely by the Bureau. They have depended solely on the Bureau for funding. Additionally, the two post secondary schools operate as full academic and residential colleges, the TCCC's operate as commuter colleges. The two post secondary schools do not count students by Indian Student Count (ISC); they count by FTE.

Question: Does the mission of Haskell differ from that of the tribally controlled community colleges? If so, how?

Answer: The mission of all schools is to provide educational opportunities for Indian students. However, the schools are different in that Haskell and SIPI are Bureau-operated and thus bound by federal rules and regulations. The Tribally Controlled Community Colleges are controlled and operated by tribes and are able to be more oriented to the cultural and traditional needs of their students.

Question: The projected enrollment at the tribal colleges is projected to increase roughly 7 percent from FY 1989 to FY 1990. What enrollment projections do the colleges anticipate in FY 1991?

Answer: The colleges predict an increase of 10% in their enrollment for FY 1991. The actual Indian Student Count (ISC) for FY 1990 is 4,759. The estimated ISC for FY 1991 would be 5,235 based on the colleges' prediction.

Question: In FY 1990, Congress increased the funding available for the tribal colleges, resulting in an average of $2,200 per Indian Student Count for FY 1990 for the Title I colleges. This is still less than 40 percent of the authorized level. Last fall, the Carnegie Foundation issued a report, entitled "Tribal Colleges: Shaping the Future of Native America". In general, the report was very supportive of the role these colleges play in their respective communities. What policy has the bureau taken in response to the Carnegie report?

Answer: The Bureau considers higher education to be a vital program for the advancement and development of Indian tribes and funding requested in FY 1991 is commensurate with the importance placed on higher education. The FY 1991 request is a substantial increase over prior Administration requests and will continue support for TCCCs at a level slightly above FY 1990.

Question: What steps has the Bureau taken to work with the colleges in the development of their programs?

Answer: The Bureau has direct contact with the individual colleges and with the American Indian Higher Education Consortium (AIHEC) and will be providing technical assistance to help the colleges progress toward the ten recommendations of the Carnegie Report. The Office of Indian Education Programs proposes to assume an advocacy role for the colleges, assist those colleges which are not accredited to attain status, and encourage the tribes' higher education programs.

Continuing Education

Question: In FY 1988, the endowment program for the tribal colleges was initiated. Funds have been awarded pursuant to Federal Register Notice since regulations have not been finalized. When are these regulations expected to be finalized?

Answer: The regulations for Title III of P.L. 98-192 which pertain to the Endowment Program were drafted in 1986, revised in 1988 and 1989 after consultation with the Indian tribes, and are presently being reviewed internally by the Bureau. They should be ready for publication in the Federal Register for public comment in May 1990.

Question: What accounts for the delay?

Answer: The tribes and the colleges recommended many changes to the 1988 version of the regulations. In addition, questions on the portion of the regulations pertaining to construction have not been resolved within the Bureau.

Question: Have the funds appropriated in FY 1990 for the endowments been allocated yet? What is the timeframe for completing the allocation?

Answer: The final allocation of endowment funds was completed in February 1990.

Question: What requests were received by the Bureau for technical assistance from the colleges in FY 1990? How much total funding was requested? Awarded? What is anticipated in FY 1991?

Answer: The post-secondary education staff provides general technical assistance to the colleges through their ISC audits and provision of information. It has been customary, however, for the Bureau to allocate the technical assistance funds equally to all colleges. In FY 1990, each college received $5,200 of the $114,400 available after sequestration.

Question: What criteria are used by the Bureau in awarding the technical assistance funds?

Answer: As stated above, funds are distributed equally to all colleges.

Question: In FY 1991, the Bureau is proposing to reduce, by $360,000, the funding available for special higher education scholarships. The Bureau has increased the number of scholarships awarded by almost 11 percent between 1989 and 1990. How has this affected the average award per student?

Answer: The number of applicants does not determine the amount of award per student. The average grant awards are detailed as follows:

FY 1989	$4,835a/
FY 1990	4,700
FY 1991	4,500b/

a/ Figures are provided by the contractor.
b/ 1991 is an estimate by the contractor.

Question: What percent of the total funding available in FY 1990 was awarded to each of the fields of study?

Answer: Approximately 5% of the awards are made to fields other than the priority fields. In the 1988-89 academic year, students funded by field were as follows:

	Applicants	Awards
Applicants Funded by Field of Study:		
Law	152	101
Education	129	62
Business	59	29
Health Professions	138	82
Engineering	7	7
Natural Resources	2	1
Other Fields	74	3
Total Students Funded	561	285

Question: The budget indicates that 531 applicants and 316 awards were considered for the 1989/1990 academic year. But in responding to a question at last year's hearing, the Bureau indicated that for the same year, 292 applicants and 278 awards were considered. Which numbers are correct?

Answer: The budget justification is prepared prior to receipt of the actual figures and therefore uses estimates to project the number of applicants. The figures 531 and 316 are estimates and could change once the actual figures are received from the contractor.

Question: What accounts for these discrepancies?

Answer: The discrepancy is between estimated and actual figures and exists because of the time the budget justification is prepared.

Question: In FY 1991, the Bureau proposes a reduction to the higher education grant program funded under Tribe/Agency operations. The projection for students assisted is at the lowest since 1979. What is the total number of Indian students eligible for this program?

Answer: The Bureau is unable to provide total numbers of applicants and eligible students at this time because many of the higher education programs are contracted by the tribes. They are not required to submit their reports until 90 days after the contract period. The Bureau has not received all the annual reports which contain the data requested.

Question: What has been the pattern of applications for this program over the last three fiscal years? Has it increased, decreased, or remained the same? Please provide specific figures.

Answer: We will provide specific data to the Committee after we have collected it from field locations.

Question: A dramatic reduction in the number of students assisted occurred between FY 1989 and FY 1990. At the same time, the average grant size per student increased. Was this a deliberate policy change by the Bureau? What role did tribes have in this decision?

Answer: The "average grant size" is calculated by dividing students served into the total funding. The Bureau has not changed its policy regarding the higher education criteria for eligibility for grants. Some tribal contractors have a policy of first-come, first-served, but with the exception of the Zarr vs. Barlow case which removed the 1/4 degree of Indian blood requirement, there has been no policy change. The reduction in the number of students assisted, with the average grant size per student increase may be due to the increase in the cost of higher education. The data is also skewed by the fact that a number of tribes moved their scholarship program into the Consolidated Tribal Government Program in 1991.

Recognition of Tribes

Question: Of the 24 petitions that have been reviewed, what is the Bureau's timeframe for issuing final decisions? Are there intervening steps that must occur first?

Answer: In May 1989, processing was complete on 24 groups which had petitioned for acknowledgment. Of these, 7 were acknowledged, 12 were denied acknowledgment and 5 were resolved outside the acknowledgment process (e.g., acknowledged legislatively). The decisions are final and complete in all of these cases and no further steps remain to be taken. Currently there are 32 cases for which processing is completed.

Question: Of the 14 backlogged cases, how long does BIA estimate that the 4 cases presently under review will take?

Answer: The present backlog of cases is 9. One of these is currently under active consideration. It is estimated that a proposed finding will be published within eight months.

Question: What is the average time required from the time a petition is submitted until a final decision is made?

Answer: The average time between when a petition was documented and ready for consideration and a final determination was made effective, has been 2.5 years.

Question: The Bureau indicates that 7 cases are awaiting deficiency review. Do the same persons conduct the deficiency reviews who process the backlogged cases?

Answer: There are currently four cases awaiting obvious deficiency review, two of which have been received in the past 5 months. Staff preparing the determination whether a petitioner meets the requirements for acknowledgment are not necessarily the same as the staff who conducted the preliminary review for obvious deficiencies. Staff assignment is made on the basis of availability and to facilitate a prompt review.

Question: How would the timeframes discussed above be changed with the additional two review teams?

Answer: The cases in the present backlog would be eliminated in 1992.

New Tribes Funding

Question: Congress directed in FY 1990 that new tribes funding be allocated equally between the Lac Vieux Desert and Coquille tribes, since those were the only tribes expected to be eligible for new tribes funding in FY 1990. Will the San Juan-Southern Paiutes be eligible for Federal recognition during FY 1990?

Answer: The Navajo Nation requested reconsideration of the recognition of the San Juan Southern Paiutes and the Secretary of the Interior recently denied the Navajo request, therefore, the San Juan Southern Paiutes are now considered a separate tribe.

Question: How will the Bureau address their funding requirements in FY 1990?

Answer: No new tribes funds were requested for the San Juan Southern Paiutes in FY 1990. The Bureau is currently looking for funding to provide to the newly recognized tribe.

Question: What are the base funding requirements for the San Juan Southern Paiutes?

Answer: The San Juan Southern Paiute Tribe currently has 188 members. Because of the remoteness of the tribe's location, we would recommend $250,000. We would also suggest that administrative funds in the amount of $25,000 be made available for the local BIA agency to provide technical assistance in the establishment of the new tribal government.

Question: How will these needs be addressed in FY 1991?

Answer: The San Juan Southern Paiute will continue to receive services from the Navajo Area office until their New Tribes Funding is established. They will, however, be eligible to apply for non-IPS funded programs in FY 1991.

Hoopa-Yurok Settlement

Question: The budget requests $133,000 to fund implementation of the settlement roll and electoral provisions of the Hoopa-Yurok Settlement Act (P.L. 100-580). How much will be spent in support of these activities in FY 1990? How much has been spent to date?

Answer: In FY 1990, the Bureau is requesting a reprogramming of $500,000 to complete the enrollment and appeals process and realty functions. In FY 1989, $100,000 was reprogrammed from Central Office functions for the implementation of the Act.

Question: What alternatives has the Bureau considered in order to prevent a complete stoppage of work in FY 1990?

Answer: A reprogramming request to meet the needs of the Northern California Agency and the Sacramento Area Office was prepared by the Bureau and will be submitted to Congress.

Question: If additional funds are not identified for FY 1990, how will this alter the expected completion date for the work?

Answer: Without approval of the reprogramming request, the Bureau will have to request an extension to meet timeframes established in the Act.

Question: What activities will be accomplished in FY 1990? Projected for FY 1991?

Answer: In FY 1990, the rolls will be completed for publication in the Federal Register, enrollment appeals will be determined, publication of public notices will be made in local newspapers for consultation meetings and the development of the Economic Development plan.

In FY 1991, an election will be held to determine the Interim Council of the Yurok Tribe, tribal entities will be consulted on the draft constitution, and an election will be held for the adoption of the constitution.

Question: Section 2(c)(3)(B) of the Hoopa-Yurok Settlement Act (P.L. 100-580) authorized $5 million for acquisition of lands within and contiguous to the Yurok Reservation. Dr. Brown, the budget requests funding for the other settlement acts. Why were funds not requested for this provision of the Hoopa-Yurok act?

Answer: The Bureau will not seek the appropriation of five million dollars for Yurok land acquisition until after the installation of the Yurok Interim Council and it is determined that additional land is necessary. The establishment of the Council is not anticipated until early 1991.

Prairie Dog Control

Question: What is the total estimated need for prairie dog control, both in dollars and in acreage, for each of the identified reservations?

Answer: The total estimated costs for prairie dog control for FY 1991 through 1994 would be $4 million or one million dollars per year divided as follows:

Reservation	Acres (000)	FY 91 ($000)	FY 92 ($000)	FY 93 ($000)	FY 94 ($000)
Rosebud	40	320	320	320	320
Cheyenne River	25	200	200	200	320
Ft. Belknap	35	280	280	280	280
Northern Cheyenne	20	160	160	160	160
Area & Central Office Oversight--		40	40	40	40
Totals	120	$1,000	$1,000	$1,000	$1,000

Question: By FY 1994, the Bureau will enter the maintenance phases of this control effort. Subsequent needs are likely in the outyears to assure continuation of the five-year control work. What is the estimated annual need once the control program is completed?

Answer: Subsequent needs beyond the maintenance phase of FY 1994 will be part of the funding of the regular agriculture program of each reservation. Depending on the results of range rehabilitation during that phase and ecological conditions, additional funding could be required. The estimated annual need beyond FY 1994 for range restoration and rehabilitation are unknown at this time since this phase is in the preliminary stage.

Question: On a per acre basis, are the costs to conduct "maintenance control" the same for each reservation?

Answer: Under the prevailing labor conditions, the per acre costs are the same for all reservations.

Question: Are funds included in the FY 1991 request to conduct maintenance control at the Pine Ridge reservation, where a prairie dog control program was completed in 1989?

Answer: The budget requests no funding for maintenance control on the Pine Ridge Reservation.

Question: What is the estimated cost to conduct the control program at Pine Ridge?

Answer: The costs for the control program vary from $15 to $35 per acre per treatment, depending upon the location of the prairie dog towns and density. The total cost estimate for Pine Ridge is currently unknown.

Noxious Weed Control

Question: What is the total estimated need for noxious weed control, both in dollars and in acreage, for each of the identified reservations?

Answer: Provided below are the reservations by area that will be included in the program. Acreage is provided for the area level at this time. Acreage and projected funding by reservation and agency are still being determined jointly with the local Weed Control Committees that will share the costs for the program, and will be provided when the data becomes available.

Aberdeen Area Target Acres 80,000

Sisseton
Fort Berthold
Turtle Mountain
Rosebud
Pine Ridge
Yankton
Fort Totten
Standing Rock
Winnebago
Crow Creek

Billings Area Target Acres 100,000

Crow
Blackfeet
Wind River
Northern Cheyenne
Fort Belknap
Fort Peck
Rocky Boy's

Albuquerque Area Target Acres 70,000

Southern Ute
Zuni
Mescalero
Jicarilla
Southern Pueblo
Ramah Navajo
Northern Pueblo
Ute Mountain

Anadarko Area Target Acres 40,000

Anadarko
Concho
Horton
Shawnee
Pawnee

Eastern Area Target Acres 3,000

Seminole
Miccosukee

Minneapolis Area Target Acres 5,000

Great Lakes

Muskogee Area Target Acres 25,000

Osage
Okmulgee
Miami
Tahlequah
Ardmore
Choctaw

Navajo Area Target Acres 75,000

Navajo Irrigation Program
Shiprock
Eastern Navajo
Western Navajo
Fort Defiance
Chinle

Portland Area Target Acres 85,000

Flathead
Colville
Yakima
Nez Perce
Spokane
Warm Springs
Fort Hall
Umatilla

Phoenix Area Target Acres 2,000

Uintah & Ouray

Question: Can all of these funds be expended in one year?

Answer: Yes. These funds will be expended through Self Determination contracts and through cost sharing agreements with state, county, and local governments, and land owners.

Question: What constraints exist to prevent more progress from being made on this problem in a given year?

Answer: The constraint is a long term program commitment due to the physiology of the plant species, climatic conditions, and the availability of cost share funding from state, county, and local governments, and land owners.

Question: Is this program a cooperative venture with other land owners whose property is adjacent to the reservations?

Answer: Agreements with county weed and pest control committees are essential to successfully eradicate species of noxious weeds.

Question: What costs towards the five-year program will be contributed from the tribes, adjacent private land owners, land users, and state and local governments?

Answer: The agreements with county and state governments have not been completed for FY 1990, but we estimate that non-Federal contributions will be approximately 25% in labor, material and other costs.

Question: Two different acreage figures are presented for the scope of this program. The narrative (pg. 140) identifies 485,000 acres. Which is correct? Why the discrepancy?

Answer: The 750,000 acres are the actual infested acres with noxious weeds throughout the 55 reservations inventoried. The 485,000 acres in the chart represent the highest priority acres to be controlled under the proposed plan. Both figures are correct.

Question: If 50 percent of the weeds, which are found on only 120,000 acres, are to be treated in the first two years, that leaves either 630,000 acres or 365,000 acres, depending on which acreage figure is used, to be treated in the remaining three years of the program. Is this achievable given that funding is proposed to decrease by 20 percent in year 3, and by another 50 percent in year 4?

Answer: Yes, of the 485,000 priority acres to be controlled, 50% will be targeted for control in the first two years, 20% during the third year and 10% during the fourth and fifth years.

Question: Aren't there certain fixed costs to a noxious weed control program regardless of the acreage treated?

Answer: Yes, there are certain fixed costs associated with this program. However, costs for noxious weed control also vary depending upon the density and species diversity of weeds, soil and climate conditions, and costs associated with the number and timing of applications in different geographic regions of the country.

Irrigation

Question: During FY 1990, the Bureau plans to undertake a review of its irrigation system program. What is the estimated cost of conducting this review?

Answer: The estimated cost of conducting the survey of the irrigation projects has not been determined as the collection and compilation of the data is being performed by Bureau personnel as a collateral duty.

Question: Will the review be conducted entirely in-house, or will irrigation experts from other Federal agencies participate?

Answer: The review will be conducted entirely in-house.

Question: What provisions have been made to include tribal participation in the review?

Answer: Representatives from the Inter-Tribal Agriculture Council were present at a meeting to initiate the review. The Council will involve all irrigation tribes with the irrigation engineers/managers in the development of the information and data for the review.

Forestry

Question: To date approximately 40 of the 87 forested reservations or properties have current forest management or operating plans. This comprises roughly 64 percent of the total commercial forestland base. What is the expected timeframe for completion of the updates?

Answer: The Bureau continues to strive to meet our objective to have current inventories and plans in place on all significantly timbered reservations by the conclusion of FY 1996. It is important to understand that inventories are periodic and require re-measurement every 10 years. Likewise, management plans are dynamic by nature and are totally dependent upon tribal goals and objectives which can change unpredictably. Both of these factors will impact on the achievement of this objective.

Question: What is the total estimated cost to complete these updates?

Answer: The FY 1988 Status of Forest Management Inventories and Planning report shows a need of $25.960 million through FY 1996.

Question: Last year, the forestland base affected 96 reservations or properties. What accounts for the decrease for FY 1991? Which reservations or properties were affected?

Answer: In FY 1988, there were 153 timbered reservations and identifiable trust properties, but the number of these reservations determined to require a structured forest plan (Reservations classed as 1 or 2) dropped from 96 in FY 1987 to 87 for FY 1988. Four reservations (the Mohawk, Onodaga, Tonawanda, and Tuscarora) were reclassified from Class 2 to Class 4. Other Class 2 reservations were reclassified as Class 3 reflecting changing evaluation of local resource significance relative to the utilization potential of the timber. Those were: All Miami, Hannahville, Hoh, Lower Elwha, Ramah Navajo, Shoalwater, Lokaogono, and Zia. Three reservations categorized as Class 3 in 1987, were also reclassified in FY 1988 to Class 2 (Santa Ysabel and Los Coyotes) or Class 4 (Eastern Oneida). Such changes are necessary to be responsive to fluctuating economies and evolving values as well as to present more precise information.

Question: The budget estimates that 15 management plans will be completed in FY 1990, which is a decrease of 35 percent from what was projected a year ago. But, this revised estimate is still five times greater than what was actually accomplished in FY 1989. On what basis is this increase projected, especially since the funding available in FY 1990 for these activities is essentially level from FY 1989 to FY 1990?

Answer: Planning is a 3 to 5 year process and accomplishments often lag behind obligations, especially when segments of a plan are contracted to a tribe. The absolute number of management plans can be misleading since plans vary significantly in size, complexity and cost.

Question: The budget requests an increase of roughly $2,000,000 for forest development activities. These funds would be used to address the backlog of reforestation and timber stand improvement (TSI) on reservation lands in order to bring them up to full productive capacity. What is the current estimated date for completion of reforestation and TSI for lands included in the backlog?

Answer: The special forest development backlog identified in FY 1977 is anticipated to be completed by the year 2001 at the current rate of accomplishment and annual funding of $10 million.

Question: With a proposed increase of 27 percent over the level of funding available in FY 1990, does the Bureau project any change to the estimated completion date for addressing the backlog? If not, why not?

Answer: The completion date has not been changed since the cost of work has increased, the areas being treated are not as accessible, and the more difficult terrain increases costs and lowers accomplishments.

Question: Acres treated with timber stand improvement activities are projected to increase by 27 percent, while reforestation acres increase by only 20 percent. What factors have contributed to the higher unit costs for reforestation?

Answer: As stated above, the remaining acres to be treated are not as accessible.

Question: How do the reforestation and timber stand improvement per unit costs compare with non-Indian lands adjacent to the forested reservations?

Answer: We have not made a specific study of these costs. However, since tribal contractors do work off reservation as well as on, we estimate that the cost for silvicultural treatment is similar.

Water Resources

Question: A reduction of $2,400,000 is proposed for water management, planning, and pre-development. This is a decrease of nearly 25 percent from the FY 1990 level. Each year the Subcommittee receives a considerable number of requests for assistance to tribes in the development of their water resources. What is the level of funding provided for water resources management, which funds tribal water offices?

Answer: In FY 1990, tribal water offices received $1.783 million from water resources funding.

Question: Was the Bureau able to fund, in FY 1990, all applications that met the criteria of having a tribal resolution and a comprehensive water resources plan? If not, how many were not funded?

Answer: Yes, the Bureau was able to fund all tribal requests having a tribal resolution and a comprehensive water resources plan, although these criteria were not used in distributing funds in FY 1990. FY 1991 will be the first year these criteria will be used.

Question: What was the total funding requested by the tribes for these programs in FY 1990? FY 1991?

Answer: The FY 1990 requests for P.L. 93-638 contract projects totalled $7,323,624. Requests for FY 1991 project work have not been submitted; however, the Bureau anticipates receiving the area office prioritized requests by May 7, 1990.

Question: How will the proposed reduction in funding affect this program?

Answer: The Bureau can meet the highest priority water program needs within the requested funding levels.

Question: If a tribe has not met the criteria established by the Bureau, what steps are undertaken to assist the tribe should it choose to reapply?

Answer: FY 1991 will be the first time the Bureau uses the funding criteria. Area offices will provide necessary technical assistance if tribes do not meet the criteria.

Question: How many projects are on the water resources planning priority list for FY 1991? How many are funded?

Answer: The water resources planning priority list for FY 1991 will not be finalized until May 1990. The budget request is based on estimates prepared by area offices with tribal input.

Question: Please provide a copy of the complete FY 1991 priority list for water resources planning projects, including funding amounts.

Answer: When the FY 1991 list is completed in May, the Bureau will provide a copy to the Committee.

Question: Why are funds ($950,000) for water operations of the Flathead, Miccosukee, and Seminole tribes reduced from the non-banded portion of the natural resources budget, when they were appropriated under the tribe/agency portion of the budget?

Answer: Water offices for the Flathead, Miccosukee, and Seminole Tribes were funded in tribe/agency in FY 1990, and the funding is continued there in FY 1991. The narrative addresses this to show that water offices are funded both [illegible] tribe/agency and in Water Resources.

Question: A reduction of $1,500,000 is proposed for water resources on the assumption that additional funds will be made available for tribes from other Federal agencies, such as the Bureau of Reclamation, (BOR), the Administration for Native Americans (ANA), and the Environmental Protection Agency (EPA). What funds have been secured from these agencies in FY 1990?

Answer: EPA has provided Minneapolis Area tribes with approximately $420,000 in grant funds for water quality management and protection. In addition, the Bureau understands that EPA will provide Standing Rock Sioux with approximately $17,000 for the same purpose. ANA has provided the Hoopa Tribe with approximately $150,000 for their water resources office, primarily for Trinity River Management. BOR has provided approximately $100,000 to the Yakima Tribe to support their water office, primarily relative to Yakima River Basin management and enhancement issues. This is the extent of Bureau staff knowledge of funding made available by other agencies.

Question: Have commitments already been made by these agencies to provide funding in FY 1991? If so, how much will be provided by each?

Answer: Bureau staff has no knowledge of specific commitments that have been made for FY 1991. However, the Bureau understands that more than $1 million will be made available to tribes by EPA under the Clean Water Act for tribal management and protection grants, assuming tribes qualify for the EPA program.

Hazardous Waste

Question: The FY 1991 budget proposes an increase of $2.6 million associated with hazardous waste problems on Indian lands. Prior to FY 1990, preliminary assessments and site inspections were conducted on 20 different sites. What is the ranking of these different sites? Which will require remedial action?

Answer: The ranking of sites which will require remedial action follows:

Rank Score	Site Name	Location	HRS**
1	Fort Howard Lagoon	Oneida Tribe, Wisconsin	46.02
2	Masonite Mill Creek Lumber Mill	Hoopa Valley, California	25.73
3	Kenwood Refuse Dumps	Cherokee, Oklahoma	25.12
4	Tulalip Landfill	Tulalip, Washington	25.02
5	Copper Bluff Mine	Hoopa Valley, California	19.02

** HRS - EPA Hazardous Ranking System

Although the Fort Howard site scored above the EPA threshold of 28.5 HRS and was qualified for remedial action by the EPA under the Superfund National Priority List (NPL), it is not on the recent update of the NPL (40 CFR 300) for remedial cleanup as published in Volume 55 of the Federal Register dated March 14, 1990.

Sixteen other sites were determined by our contractor to pose no risk to public health and the environment. No further action is required.

Question: What is the estimated cost to address the hazardous waste problems identified at the 20 different sites?

Answer: The four sites under remedial investigation are small, and the estimated cost for their cleanup is $3 million or about $750,000 each.

Question: Who is responsible for the hazardous dumping? Can they be made to pay for the cleanup?

Answer: Identification of the "Potentially Responsible Party(ies)" (PRP) is part of the remedial investigation. Results for the Masonite Mill and Kenwood Refuse Dump will be known during FY 1990; results of the other two will not be known until FY 1991. If PRP's were identified, they could be billed for the costs of cleanup and associated expenses since CERCLA/SARA requires cleanup first and pursuit of litigation later.

Question: Funds are requested to begin remedial cleanup and restoration in FY 1991 at either the Masonite Mill (CA) site, or the Kenwood dumps (OK) site. Whether both will be ready to go in FY 1991 is unclear since the feasibility studies will not be complete until sometime later in FY 1990. Does the Bureau have a preliminary cost estimate for actions necessary at either of these two sites?

Answer: The remedial investigation and feasibility study contracts for these two sites will be completed by September 1990. At this time the estimated cost for the two sites is $1.5 million.

Question: The Masonite feasibility study was undertaken in FY 1989 and is, as I understand it, not yet complete. What is the probability that the Kenwood analysis will be completed in a shorter period of time since it wasn't initiated until FY 1990?

Answer: The contract for the Kenwood Refuse Dumps war awarded in mid-February and completion is expected by the end of August 1990.

Construction Management

Question: Funding is requested in FY 1991 for the construction of two education projects. These have been identified as the first and third projects on the priority list. What happened to the second school on the list?

Answer: Coeur d'Alene was initially ranked for consideration in the FY 1990 budget, but prior to publication concerns were raised regarding the verification of student enrollment data. Therefore, a second validation was necessary prior to budgeting for construction. Since the level of construction funding had been set, the Department decided to partially fund Pine Ridge which was the next school on the priority list.

After the revalidation was completed, Coeur d'Alene was again ranked as number 2 on the priority list. The administration, however, was reluctant to delay the second phase of the Pine Ridge project for another year.

Furthermore, late in the fall of 1989, discussions were held between the Coeur d'Alene tribe and the surrounding school district (Plummer School District) about the possibility of developing a cooperative agreement and making improvements to the public school building in order to accommodate the Coeur d'Alene children.

Question: Why would you rank a partially completed school lower than a school to be newly constructed?

Answer: The answer above provides an explanation for the first phase of Pine Ridge being funded in FY 1990. Though Coeur d'Alene is ranked as number 2 on the 1991 priority list based on our established criteria, we feel it is prudent to complete Pine Ridge before beginning construction of Coeur d'Alene.

Question: What is the estimated cost for construction of the Coeur d'Alene school?

Answer: The estimated cost of Coeur D'Alene is approximately $3.7 million.

Question: What are the next five projects on the priority list? What are their estimated costs?

Answer: The next five projects on the FY 1991 list are:

-- Santa Clara Day School -- Approximately $4.3 million
-- Zia Day School --Approximately $4.6 million
-- Tiospa Zina - approximately $8.3 million
-- Pyramid Lake - approximately $3.6 million
-- Rock Point Community School - approximately $5.7 million

Question: Has planning and design occurred for these next five projects?

Answer: Planning and design has not occurred for these schools, because they were not funded in the FY 1991 request and would have to reapply for consideration in future years.

Question: Has the Office of Construction Management (OCM) considered revising the timing for the priority list, so that it is not revised annually? What happens to those projects that are just below the cut-off line? Must they reapply every year?

Answer: Given the large volume of applications for very limited resources, and the fact that there may be changing demographic and other information which could affect ultimate placement among priorities, the annual process provides the Department with the most up-to-date information on which to rank new school construction. Projects which are not funded in a given year must reapply.

Question: What would be the advantages and/or disadvantages of using a priority list that is updated every 3 years? Every 5 years?

Answer: The advantages of both a 3 or 5 year process would be to limit the amount of time and effort the individual school boards would have to devote to preparation of applications (one time only) and to develop a multi-year list from which decisions could be made for funding over a multi-year period. It would also assist in planning and design scheduling. However, the disadvantage is that there are variations from year to year which could affect priority ranking and would not be fully reflected on a multi-year period, e.g., changes in demographics.

Long-term scheduling would have to be accompanied by certain flexibilities to allow adjustments as required. Given the fact that the evaluation and ranking process is fairly new, annual reviews would initially be appropriate. Since the process which will lead to the FY 1992 request is already underway, any change should be considered for the FY 1993 budget.

Question: In addition to funds for education project construction, a request of $2,500,000 is included for construction of new law enforcement facilities. Which projects will be funded in FY 1990?

Answer: The $2.5 million requested in FY 1991 will be combined with the balance of other available juvenile detention funds to construct the projects in ranked order. The exact number of projects which will be constructed will not be known until the scheduled PONI studies are completed. One of the products of a PONI is a project construction budget.

Question: Will the $2,500,000 requested fund the entire cost of these projects, or are they phased?

Answer: It is anticipated that $2.5 million should fund one or two projects.

Question: Will the law enforcement facilities be subjected to annual re-ranking?

Answer: Due to the newness of the detention center planning process, this issue has still not been decided within the Department. However, there are no plans to conduct PONI studies on more than the top 10 tribes listed in the Federal Register Notice dated July 12, 1988.

Question: As with education, what would be the advantages and/or disadvantages of using a priority list that is updated every 3 years? Every 5 years?

Answer: The advantages and disadvantages would be about the same. However, because planning and construction for juvenile detention centers is even newer, the procedures are not as clear or well defined as for education construction. The Department is in the process of developing a multi-year program for adult detention facilities.

Question: In recent years, Congress has provided funding for the construction of emergency shelters and halfway houses as part of the government's Omnibus Drug Program. For FY 1991, the budget proposes an increase of $3,500,000 for staffing and operation of these facilities. What is the current total estimate of the number of halfway houses and emergency shelters to be constructed by the Bureau?

Answer: To date, 17 grants have been awarded; five shelters are operational and 11 more will become operational in FY 1990; one will become operational in FY 1991. Construction funds have come from the original $5 million appropriated in FY 1987. The additional $3 million provided as part of the FY 1990 Department of Transportation Appropriations Act will construct 12-13 more emergency shelters.

Question: How many of these are now operational? How many are expected to become operational in FY 1991?

Answer: As stated above, we estimate that 17 shelters will be operational by FY 1991.

Question: What is the average cost to staff each of these units?

Answer: It has been estimated by the Office of Construction Management that it will take approximately $2,252,500 for the staffing and operating requirements for twenty (20) emergency shelters. It is unrealistic to compute an average cost since the shelters range in size from 25-bed capacity to only 7 beds. Clearly the larger facility will require more staff and operational resources. For the purposes of arriving at an average cost, it is reasonable to predict that the annual cost will range somewhere between $115,000 and $250,000 depending on the size of the shelter. Question: What percentage of the full staffing complement are these facilities projected to be operated under in FY 1990? For FY 1991?

Answer: These facilities are tribally run and operated. The total number of staff that will be hired by the tribes will not be known until they submit proposals to central office for operating dollars. The Bureau believes that they will be able to meet 100% of the staffing needs.

Question: Last year, Congress provided $510,000 for OCM to conduct a comprehensive inventory of BIA-owned utility systems. What is the status of this study effort? Will it be completed during FY 1990?

Answer: The funds for this study were appropriated under Construction Program Management (General Administration) which funds the administrative and staff costs for the Facilities Management Construction Center in Albuquerque. In FY 1990, funding was provided to staff the environmental and building code compliance organization. This staff is responsible for environmental and safety issues and oversees the asbestos evaluation required under the AHERA legislation.

It became clear that the full costs of the comprehensive utility system inventory would greatly exceed original estimates, and that there were insufficient funds to provide for both the staffing and the contract. Therefore, it was determined that the utility system inventory would be funded from the Minor Improvement and Repair Program (MI&R). A reprogramming to accomplish this was submitted on April 9, 1990 as follow-up to the reprogramming letter of July 20, 1989.

By the time the reprogramming was approved, there was not sufficient time to award a contract through the Bureau. As a result, OCM provided Phase I funding from available Office of the Secretary funds in order to initiate at least this phase of the contract. Phase II and III are still proposed to be funded from MI&R in FY 1990 and FY 1991 if necessary. This proposed funding is contingent on Congressional approval of the April 9, 1990 reprogramming letterl.

Question: Why are funds continued for this purpose in the FY 1991 budget, if the study is to be completed during FY 1990?

Answer: The funding level requested is necessary for staff costs associated with the positions located in Albuquerque. Any additional costs associated with the utility study will be funded from MI&R.

Education

Question: In FY 1991, the Bureau proposes to eliminate student transportation costs as a separate line item and merge these costs in with the Indian School Equalization Program. On what basis has BIA proposed this transfer? Is it a statutory requirement or administrative flexibility?

Answer: P.L. 95-561 authorized the Bureau to fund transportation in the Indian School Equalization Program formula. Schools currently have the flexibility to use transportation dollars for educational purposes or vice versa depending on their local needs. While the funds will be distributed together to provide flexibility, the calculation of transportation funding will continue to be accomplished as it has in the past.

Question: What was the average cost per mile for FY 1990? What is the projected average cost per mile in FY 1991? How do these compare to FY 1985? FY 1980?

Answer: The following table explains the funding per mile for the years in question. In FY 1986, the method of calculating transportation funding was changed. The funding per mile only addresses day student transportation. Transportation for students in dormitories and boarding schools is funded by multiplying the actual cost of bus ticket or airline ticket to arrive at school in the Fall by 4. The remaining transportation funds are then divided by (the number of day school miles reported X 180 days of school) to determine the per mile rate for day school transportation.

Fiscal Year	per mile
FY 1980	$ .85 per mile and $.61 per student
FY 1985	$ .85 per mile and $.61 per student
FY 1990	$1.15 per mile
FY 1991	$1.12 per mile

Question: What is the total mileage used in the calculation of these estimates? Has this changed from FY 1990 to FY 1991?

Answer: The following chart illustrates the total number of miles reported by schools in FY 1990 and used in calculating funding per mile. The FY 1991 miles will not be reported until after count week next Fall.

	1990
Day miles	9,816,120
Residential miles	354,496

Question: What assurances can you provide the Committee that merging the transportation dollars into the formula will ensure that dollars allocated to transportation do not get re-allocated to other educational purposes?

Answer: The funds will be distributed together to provide the flexibility authorized by P.L. 95-561 as discussed in the answers above. However, the calculation of funding for transportation remains unchanged, and the funding level that results from the calculation will be added to the funding for the ISEP formula and then distributed.

Question: Pursuant to the Education Amendments of 1988, the Bureau retains 1 percent of its education formula monies as a contingency for the Office of Indian Education Programs to meet unanticipated requirements at Bureau-funded schools. What was the total amount withheld for FY 1990?

Answer: P.L. 100-297 authorized a directors contingency fund at 1% of the ISEP formula appropriation. In FY 1990, the total withheld for the fund was $1,707,100.

Question: Have any of these funds been expended to date? If so, for what purposes?

Answer: As of March 31, 1990, the expenditures of the contingency fund include the following items:

ISEP Adjustments

Chief Bug-O-Nay-Ge-Shig School	$ 491,800
Tuba City Boarding School	57,500
Pierre Indian Learning Center	25,700
Cherokee Central School	16,800
Gila Crossing Day School	3,700
Crow Creek High School	3,200
Rocky Boy Tribal High School	9,500
Third Distribution of ISEP	364,400

The Bureau expects to make additional distributions to schools as the ISEP audits are completed and as other needs arise.

Question: Will any of these funds be used to address shortfalls in FY 1990 due to the sequester?

Answer: The Bureau does not propose to use these funds to address funding shortfalls due to sequestration.

Student Enrollment

Question: The Bureau projects a decline in the daily membership (ADM) from FY 1990 to FY 1991 in the schools it funds. Is the Bureau likely to see the declined enrollment, particularly since it had projected an ADM decline from FY 1989 to FY 1990 and instead experienced an increase of over 400 ADMs?

Answer: The Bureau believes the overall decline in enrollment will continue. The increase in FY 1990 was so unexpected that the Bureau surveyed second semester enrollment and discovered that 910 students have left the system since student count week last Fall.

Question: The Bureau has indicated that 82 schools experienced a decline in enrollment for FY 1990, despite the overall increase in enrollment. Were the offsetting enrollment increases concentrated at particular schools?

Answer: Ninety-two schools experienced some increase in enrollment, and the enrollment in six schools remained unchanged.

Question: What affect have these enrollment increases had on the ISEP for FY 1990, since the additional funding provided by Congress addressed teacher pay and gifted and talented students?

Answer: If 1990 enrollment and WSUs had stayed at the 1989 level, the values of a WSU would have been $2,537 compared to the $2,510 distributed thus far.

Question: Since the Bureau's budget treats the FY 1990 enrollment increase as a one-time deviation from recent trends, to what do you attribute this occurrence?

Answer: The increase in enrollment is predominantly in kindergarten and in grades 1, 2 and 3. As stated above, the enrollment has declined by 910 students since student count week.

Education Training

Question: The Bureau is requesting an additional $500,000 in FY 1991 for staff development and training activities. Considerable investments must be made each year since the Bureau experiences a turnover rate in teachers and related staff of about 30 percent annually. Has this turnover rate varied or been consistent over the last ten years?

Answer: The Bureau has not maintained retention statistics over the last ten years. In the past two years the turnover rate has been 30 percent.

Question: How does this rate compare with similarly situated public and private schools?

Answer: The Bureau does not have statistics on the retention rate for public or private schools.

Questions: What reasons for leaving are most prevalently cited by teachers?

Answer: Teachers leave for various reasons. The most common are low pay, isolation, and living conditions.

Question: Does the Bureau have any information as to what some of these individuals do after leaving the Bureau schools? Are they still teaching?

Answer: The Bureau does not have information on personnel who have left the Bureau's education system.

Question: Hopefully, recently enacted pay raises for Bureau teachers will help to address this turnover rate. What other steps is the Bureau taking to improve its teacher retention rates?

Answer: The Bureau has started a teacher and principal recognition program; provided staff training opportunities during the summer months; and has started to evaluate the teacher housing situation.

Question: A significant increase of $2,000,000 is requested for pilot programs to encourage parental and community involvement in student education. What input did tribes have in the decision to advocate the "Parents as Teachers" (PAT) and "Parent and Child Education" (PACE) programs?

Answer: The tribes indicated in their responses to the survey conducted by Assistant Secretary Eddie Brown that their top priorities were parental involvement and early childhood education. The "Parents as Teachers" (PAT) and "Parent and Child Education" (PACE) programs incorporate both of these components, as well as a family literacy program. The Bureau reviewed these programs extensively and offered them to the tribes as examples of programs with proven track records. These programs have been successful in other environments, but will need to be adapted to the needs of Indian parents and children.

These options were topics for discussion at each of the three mini-summits were held across the country which provided tribes with the opportunity to have input and make recommendations for these and other education programs.

Question: How many such PAT and PACE programs does the Bureau project will be funded in FY 1991?

Answer: The Bureau anticipates that in FY 1991 six to ten school sites will be funded for early childhood education/parental involvement programs serving children from birth to six years of age and their parents. PAT and PACE are programs the Bureau will recommend to serve these parents and children. The total number of children served would be approximately 1,000 and the total number of families would be approximately 750.

Question: What will be the allocation of the funding requested between the two programs?

Answer: The allocation of funding requested will depend upon the number of children and families served under each program. We estimate a cost of $2,000 per child for each program.

Question: What will be the basis for awarding the PACE grants?

Answer: The awarding of PACE grants will be determined by weighted factors, including:

a. availability of appropriate classroom and playground space;
b. provision of transportation for children and parents;
c. coordination of services with tribal, state, and other federal programs;
d. assurances of tribal, community, and school support for the program;
e. availability of trained personnel;
f. geographic considerations; and
g. identification of numbers of children from birth to 5 years of age and parents of these children who are interested in participating in the program.

Other Education Issues

Question: Funding of $625,000 is requested in the FY 1991 budget to implement an equipment supply program for junior and senior high schools that have departmentalized and developed a differentiated curriculum for the major disciplines. What is the total estimated equipment need for these junior and senior high schools?

Answer: The figure of $625,000 was taken from the 1987-88 visit to the schools by the review teams assigned to review the standards compliance of schools. Approximately 124 schools with a junior and senior high school will need to purchase equipment from these funds. They will also use funds from

ISEP. The Bureau estimated the per school cost at $5,040. The Bureau is in the process of reviewing the schools' compliance reports for the 1988-89 school year to determine their current needs.

Question: How will the Bureau be able to determine why similar equipment purchases cannot be accommodated within ISEP funds?

Answer: The schools are required to report for Standards Compliance in October of the school year. The reports from 1985 through 1988 indicate a need for equipment of this nature, and all indications are that the schools are experiencing difficulty in meeting the standard which requires the schools to have fine arts, practical arts and computer literacy in the curriculum. Additionally, the schools report in FY 1989 and FY 1990, 82% of the ISEP monies are expended for personnel costs. That leaves little for program expenditures when you subtract the amount needed for school supplies, food and in some cases, laundry.

Question: The budget indicates that senior high schools may apply for funding on a matching basis. Why are the junior and senior high schools treated differently?

Answer: Senior high schools are equipped as part of the building program when originally built. Since junior high schools are part of the elementary school system (i.e. Grades K - 8), specialized equipment was not included in the original purchase.

Question: Will schools use the ISEP formula funds to fulfill their matching requirement?

Answer: The schools will use their ISEP funds as their match.

Question: For the second year, the Bureau is proposing a decrease in the funding available for substance and alcohol abuse counselors, since the Bureau continues to experience difficulty in hiring certified, credentialed counselors. Instead, the Bureau has provided training to existing personnel. How have the additional counseling requirements placed on Bureau personnel been reflected in the Indian School Equalization formula?

Answer: The additional counseling requirements placed on Bureau personnel would not be reflected in the ISEP formula. The formula for distributing Alcohol and Substance abuse funds is different, although it is based on WSU and a base of $6,000. The WSU value excludes all supplemental programs and includes the base ISEP dollars plus the small school adjustment.

Question: Would these funds be appropriately administered under the formula?

Answer: The Alcohol and Substance Abuse funds could be administered under the formula and the Bureau is considering moving these funds in 1992 to the ISEP formula.

Question: If transferred, how would the Bureau ensure that continued efforts are undertaken in support of anti-substance and alcohol abuse?

Answer: The Bureau is required under P.L. 99-470 to include an alcohol and substance abuse curriculum as part of the education program. The Bureau would have to monitor the schools to assure that such programs were included.

Question: Last year, Congress provided additional funds for teacher pay. A second increment to comply with recent teacher pay raises is included in the FY 1991 request. In calculating the cost estimates for the recent pay raises, did the Bureau also conduct an evaluation of the impact of the teacher pay raises on the cost of providing benefits to those teachers?

Answer: In estimating the cost of the teacher pay raise, the Bureau did not calculate the increased cost of employee benefits which is now estimated to be $2.8 million. The Bureau expects to include such costs in the request in FY 1992 to correct this oversight.

Question: What is the estimated increased cost for benefits in FY 1990? FY 1991?

Answer: The estimated increased cost for benefits for those teachers who converted from general service to contract educator positions (DOD scale) and for those contract educators who received a pay increase is estimated at $2.0 million for Bureau-operated schools. Using the same percentages applied in calculating the cost of pay raises for contract schools, the benefit estimate for contract schools is $800,000.

Question: How will the Bureau fund these costs in FY 1990?

Answer: The Bureau schools will absorb the increased costs of benefits in their regular ISEP funding.

Aid to Tribal Government

Question: The base program for community services is split between area and central office operations. The average funding per FTE in the central office is nearly twice that provided for the area offices. How do the skills required differ in the central office from the area office to merit such a difference in average cost?

Answer: The difference is associated with the fact that the central office salaries include those of the Deputy to the Assistant Secretary - Indian Affairs (Tribal Services) which is a SES position and attendant staff which consists of: one GM-15; one GS-14; one GS-9; and one GS-5.

The central office program also provides the funding for the Bureau's General Inquiries Office, which responds to over 30,000 public inquiries annually, and has a staff which includes one Public Information Specialist (GS-14) and one clerk-typist (GS-5). A Child Protection Specialist (GM-14) who coordinates all activities related to the Bureau's child abuse initiative is also funded in this line of the budget.

Question: Is the technical assistance by the central office different from that provided by the areas? How so?

Answer: The technical assistance provided at each area office pertains to that area only, while the central office technical assistance pertains to the program on a Bureau-wide basis.

Question: An increase of $225,000 is requested for community services in the area offices. This represents an increase of approximately 158 pereent. What are the priorities for the expenditure of the requested increase?

Answer: The increase of $225,000 is a direct result of the priorities set by the Juneau and Phoenix Area Directors. The funding will be used to fill four vacancies with a small amount available for travel, supplies, and materials.

Question: Since only 1 FTE is requested along with the $225,000 how would the remaining funds be spent?

Answer: Only 1 FTE is requested because 3 vacant unfunded positions already exist.

Question: What workload factors have changed to require such an increase?

Answer: The Area Directors for the Juneau and Phoenix areas determined that Assistant Area Directors were needed to more effectively manage their tribal services programs. Presently, there is only one Assistant Area Director in these locations to manage and oversee all programs. In terms of expertise it is difficult to expect these individuals to cover all Bureau programs and to do the job well.

Social Services

Question: Recent changes in the general assistance program have resulted in increased cost for general assistance in the States of Washington and Oregon. An increase of $700,000 is requested in FY 1991 to help address these requirements. What are the estimated costs for general assistance in Washington and Oregon during FY 1990?

Answer: The Bureau is currently conducting an analysis of the projected expenditures in the States of Oregon and Washington in response to a Congressional Directive. A letter dated March 21, 1990, was sent to your Committee and discussed the problems we have encountered in preparing the final analysis. We hope to provide the final analysis to the Committee by May.

Question: What is the total estimated funding available to meet these requirements? Will a reprogramming be submitted to address any shortfall?

Answer: The Bureau anticipates a Bureauwide shortfall in general assistance and will be requesting a reprogramming of funds.

Question: How does the Bureau plan to address these costs in the context of the FY 1991 budget, since a base adjustment was not included to account for these costs?

Answer: If the Bureau determines that FY 1991 funding for the general assistance program is insufficient, the Bureau will request a reprogramming of funds.

Question: The budget proposes a transfer of $222,000 from the Navajo Area Office to Tribe/Agency Operations for the Navajos. For what programs are these funds used?

Answer: The Navajo Area requested the transfer from Area Direct to Tribe/Agency Operations to support one supervisory GS-13 Social worker and six GS-11 Social Workers. The purpose for the transfer was to provide Agency Superintendents with staff to provide P.L. 93-638 contract oversight and delivery of program services at agency locations.

Question: Why is there no FTE impact associated with a transfer of this magnitude?

Answer: The 1990 plan as submitted to Congress requested 7 FTE under Area Direct. The 1991 plan supports 6 FTE. However, the Area Field portion of the Navajo budget has $69,000 in place which supports 1.5 FTE identified for Area Office (Child Protection Initiatives). Considering the total resources for Area Direct, Area Field Operations and 5 Agencies, the Social Services (BIA Residual) Program has actually been expanded. There is no negative FTE impact.

Question: Grants for Indian Child Welfare are continued in FY 1991 at approximately the same level as enacted in FY 1990. But, the Bureau is projecting a 7 percent increase in the number of grants awarded, thus causing a decrease in the average award size. What is the number of Indian Child Welfare Act grant applications received by the Bureau for FY 1989-1990? Projected for FY 1991?

Answer: The number of Indian Child Welfare Act applications received by the Bureau in FY 1989 and projected for FY 1990-1991 are as follows:

FY 1989 --- 202 (actual)
FY 1990 --- 210 (projected)
FY 1991 --- 210 (projected)

Employment Assistance

Question: The budget estimates that 1,108 trainees will be served under the employment assistance program in FY 1991. This is an increase of roughly 4.5 percent over the FY 1990 level. The budget also indicates that the average cost per participant is increasing. How can both of these factors increase when the total funding available for this program decreases by 23 percent in FY 1991?

Answer: The funding levels of employment assistance are determined at the local level based on program needs. For example, the Minneapolis Area decreased Employment Assistance by $347,000, but increased Adult Vocational Training by $362,000. Agencies do not submit workload data, and the workload data printed in the budget is estimated in Central Office. It does appear to be in error.

Question: What funding would be required to serve the projected participants in FY 1991 at the same rate as was provided in FY 1990?

Answer: As stated above, the number of participants is estimated in Central Office based on actual previous year data.

Navajo-Hopi Settlement Program

Question: The Secretary of the Interior is to restore the grazing capacity of rangelands lying within the former Navajo/Hopi Joint Use Area. The budget justification (p. 114) indicates that the rangeland restoration effort is 60 percent completed for Navajo Partitioned Lands, and 90 percent completed for Hopi Partitioned Lands. Is this correct?

Answer: Yes, this is correct.

Question: In last year's budget, BIA indicated that the percentage completion for the Navajo and Hopi lands was 60 and 70 percent, respectively. Why is progress projected in FY 1990 on the Hopi Lands, but no change to the Navajo lands?

Answer: All restoration activity is dependent upon achieving grazing control prior to commencing the range restoration program. In 1978, grazing regulations were promulgated for the Joint Use Area in 25 CFR, Part 153. In 1982, a court decision overturned the grazing regulations due to the lack of tribal concurrence in the promulgation of these regulations. New grazing regulations in 25 CFR, Part 168, were promulgated for the Hopi Partitioned Lands (HPL) in September 1982. Since that time the Hopi Tribe and the Bureau have undertaken a cooperative approach to the planning and implementation of the range restoration activity on the HPL. The Navajo tribe has, until recently, objected to the promulgation of grazing regulations under which grazing control could be accomplished. The Navajo Tribe has now expressed a desire to proceed with the publication of final grazing regulations. Once these regulations are in place, discussions and concurrence on long range planning and a restoration program will be initiated with the tribe.

Economic Development

Question: The budget requests an increase of $30,000 for the Muskogee Area Office, but no justification is provided. How will these funds be used?

Answer: The increase will be used to pay a portion of the salary costs for an Assistant Area Credit Officer for the Muskogee area office.

Question: What workload has changed in the Muskogee area?

Answer: In 1989, two agencies in the Muskogee Area abolished their credit officer positions. The area office staff now serves those two agencies, eight small tribes under the Miami Agency, furnishes assistance and training to two other agencies where the credit program is contracted under P.L. 93-638, and provides assistance to the credit trainee at the Wewoka Agency.

Question: Are these funds in addition to to the $24,000 already directed to economic development out of Area Operations?

Answer: Yes. Both the $30,000 and the $24,000 will be used to cover the increased cost of salaries, travel, and other expenses of the area credit office.

Question: The Bureau estimates that a $7,000,000 business development grant program will result in approximately $30-35 million in private capital investment in Indian economies. Under current funding constraints, the Bureau has been able to fund slightly more than half of the applications received for these grants. What has been the average grant award?

Answer: The average grant was $19,639 for individuals and $112,887 for tribes.

Question: Is there a maximum award amount?

Answer: Yes. The maximum award is $100,000 for individuals and $250,000 for tribes.

Question: What has been the average amount requested by the applicants?

Answer: The average award requested is $25,769 for individuals, and $119,394 for tribes.

Question: Of the applications which do not receive funding, what percentage would you consider to be qualified?

Answer: Statistics on the number of applications which do not receive funding are not maintained; however, applicants not funded in one fiscal year may apply the following year.

Question: Of the 225 grants anticipated to be awarded with the $7,000,000 appropriated in FY 1990, what was the total funding requested by those grants?

Answer: Of the anticipated grants to be awarded in FY 1990, the Bureau has currently awarded 75 grants totalling approximately $2.6 million. All of the FY 1990 grant applications have not been received. As the applications are received, the Bureau will review and grant awards to qualified applicants until the funds are expended.

Question: Does the Bureau screen the grant applications for ineligible costs? To what extent is this a problem?

Answer: The grant applications are reviewed for compliance with the program guidelines. This includes the determination of whether all identified costs for a project are eligible costs. If certain costs are found to be ineligible, they are disallowed. Generally, this is not a problem.

Question: Under the Credit and Financing portion of the budget, an increase of $91,000 is requested, and staffing for this function is projected to decrease by 5 FTEs. Why are increased dollars required for a lower staffing level?

Answer: A portion of the net increase is the result of tribes reprioritizing funds from other programs to establish a Credit and Financing Program which they intend to contract under P.L. 93-638. Only Bureau employees count as FTE.

Question: How would the additional funds be spent at the tribe/agency level?

Answer: The funds will be used by the Bureau, or the tribe, if contracted, to provide technical assistance to tribal members in preparing applications for economic development grants or loans from the Revolving Fund for Loan Program and to administer the overall Credit and Financing Program.

Natural Resources Staffing

Question: An increase of $143,000 is requested to fund central office management oversight staff. The budget justification (p. 134) indicates that these positions already exist, but have been funded previously out of specific program areas, such as water resources and agriculture. Are water resources and agriculture the only programs affected by central oversight? What about wildlife and parks and minerals and mining?

Answer: The central office management oversight is also provided to the Wildlife and Parks and Irrigation Programs but has been funded out of water and agriculture. Minerals and mining is in another division and receives management oversight from that office.

Question: Is the $52,000 reduction in water resources/program management an offset to this increase? If so, why isn't a similar reduction made in agriculture and other similarly affected programs? If not, and the intention is to consolidate these positions, why aren't the corresponding dollars transferred from the other functions?

Answer: Yes, the $52,000 is an offset to the Water Resources Program. A similar offset was not made to the Agriculture Program since there was a need to fill specialized positions such as Range and Soil Conservationists.

Question: What additional work would be accomplished in each of the sponsoring programs if the existing dollars are not transferred?

Answer: If the oversight function were funded and no reduction taken in water, the Water Resources Program would hire an additional specialist to provide assistance to areas, agencies, and tribes in water management, planning, pre-development and ongoing water rights negotiations activities.

Question: How has the use of other program dollars to fund these positions affected the ability of the contributing programs to fill staff positions related to direct oversight of their programs?

Answer: There has been no impact on unfilled positions, but limited funding has been available for operating expenses such as travel related to water negotiations.

Question: A reduction of $154,000 and 13 FTEs is proposed due to reallocation of area office priorities in agriculture. This averages out to a cost of only $12,000 per FTE. Is BIA able to support program personnel at this level?

Answer: No, the $12,000 average cost would not support program personnel. Most of the 13 FTE reduction is the result of the FTE being reallocated to other programs at the area office or agency level.

Question: What are the general responsibilities of these personnel?

Answer: The general responsibilities of the agriculture personnel are involved in the planning and oversight of the agriculture engineering program, soil and range inventory, and the collection of soil and range resources data.

Question: Are these FTE savings likely to occur?

Answer: The reduction in Agriculture FTE represents a redistribution within area offices, not a savings overall.

Fish Hatcheries

Question: The FY 1991 budget proposes to eliminate the fish hatchery maintenance program, on the grounds that the remaining projects are a lower priority. How many projects remain on the priority list?

Answer: Priority listings have been developed on an annual basis from proposals submitted by tribes in response to funding made available by Congress. Attachment B provides a list of unfunded hatchery maintenance projects submitted by tribes in FY 1990. Remaining projects are of a lower priority because they are current maintenance needs and can be funded through the Indian Priority System. It is not known what projects would be submitted by tribes in FY 1991, or how such projects would be ranked by the Bureau's area office personnel.

ATTACHMENT B

Bureau of Indian Affairs
Portland Area Office
Unfunded Fish Hatchery Maintenance Projects
(Dollars in thousands)

Priority Order	Tribe	Description	Amount
1	Swinomish	Place rock rubble and control matting on eroded beach area	$6.0
2	Swinomish	Improve fish food storage and equipment security areas	4.0
3	Upper Skagit	Replace fabric roof with wood and pole frame roof	5.0
4	Squaxin Island	Replace deteriorated net pens	5.0
5	Stillaguamish	Improve storage area for flammable liquids and chemicals	2.0
6	Stillaguamish	Develop fish food storage to reduce transportation costs	5.0
7	Stillaguamish	Modify fish ladder and install safety walk access	4.0
8	Suquamish A	Upgrade existing fish food freezers	15.0
9	Suquamish C	Replace wooden intake and outflow screens with aluminum	5.1
10	Metlakatla	Install electric power at ARP	5.0
11	Little Boston	Construct a divider in adult holding pond to facilitate egg take	2.0
12	Little Boston	Improve storage for egg trays and associated equipment	3.0
13	Little Boston	Resurface Hatchery work area and improve road access	3.0
14	Muckleshoot	Install bird netting over rearing ponds	5.0
15	Little Boston	Replace boat engine for net pen access	6.0
16	Skokomish	Replace baffles and wooden lids on incubators	2.0
17	Skokomish	Dredge retention at water supply intake	2.0
18	Little Boston	Repair net pens and float structures	3.0
19	Quinault (salm)	Dredge and reform imprinting ponds	9.0
20	Puyallup	Paint fisheries office building	2.0
21	Muckleshoot	Repair cracking, aging concrete raceways and starter tanks	12.0
22	Stillaguamish	Design and construct fiberglass covers for rearing tanks	5.0
23	Elwha	Rehabilitate predator control devices at earthen rearing ponds	2.0
24	Elwha	Improve storage facility for hatchery supplies	4.0
25	Swinomish	Renovate existing concrete raceway ponds, seal cracks, resurface bottom	4.0
26	Upper Skagit	Improve water intake delivery system	5.0
27	Tulalip	Design and construct a retractable net system over rearing ponds	30.0
28	Quinault	Install predator nets over imprinting ponds	5.0

Bureau of Indian Affairs
Minneapolis Area Office
Unfunded Fish Hatchery Maintenance Projects
(Dollars in thousands)

Priority Order	Tribe	Description	Amount
1	Leech Lake	Hatchery boiler safety and efficiency improvements	$24.0-31.0
2	S.S. Marie	Maintenance of hatchery building, grounds and equipment	7.0
3	Bad River	Pond liner maintenance	2.0
4	Lac du Flambeau	Facility paving	6.8
5	Red Lake	Hatchery access road and parking maintenance	9.0-12.0
6	White Earth	Site security	14.2
7	Leech Lake	Modifications and maintenance to heat exchange system	14.9
8	Leech Lake	Maintenance of rearing tank plumbing	5.5
9	S.S. Marie	Walleye pond and maintenance	15.6
10	Lac du Flambeau	Facility landscaping	14.3
11	White Earth	Site paving and landscaping	18.0
12	Leech Lake	Net maintenance and replacement	4.0
13	Leech Lake	Upgrade radio communication in hatchery vehicle	4.4

Phoenix Area Office
Unfunded Fish Hatchery Maintenance Projects
(Dollars in thousands)

Priority Order *	Tribe	Description	Amount
1	Summit Lake Paiute	Reinforce and re-roof building enclosing Mahogany Creek fish trap facility	$4.0
2	Summit Lake Paiute	Reinforce and re-roof administration building	4.0
3	Summit Lake Paiute	Reinforce floor and install linoleum or tile in administration building	3.0
4	Summit Lake Paiute	Repair doors and winterize administration building	1.5
5	Summit Lake Paiute	Paint Mahogany Creek fish trap facility and administration building	1.2
1	Pyramid Lake	Numana Hatchery re-roofing	40.0
2	Pyramid Lake	Dunn and Numana Hatchery residential trailer re-roof	8.0

* Priority settings were made for each agency in the Phoenix area rather than on an area-wide basis.

Question: What is the estimated time required to complete the maintenance projects remaining on the priority list?

Answer: Project proposals are submitted annually by tribes to accomplish work that is required at periodic intervals (e.g., painting, paving, re-roofing, equipment servicing, etc.) to prolong the life of a facility and its components and associated equipment, and to prevent the need for premature replacement or repair. Completion dates are not included with the proposals, however, most maintenance projects are completed during the same fiscal year in which funds have been made available.

Question: What are the costs associated with completing the maintenance needs of these hatcheries?

Answer: Costs associated with the maintenance projects for FY 1990 are included on the attached list. Cost requirements in future years would vary depending on the recurring nature of cyclical maintenance projects at the various tribal hatcheries.

Trust Lands

Question: A stated goal of the Land Title and Records program is to improve the productivity of the title examination process by 10 percent, from the FY 1989 average rate of 4 man-hours per title examination. How does this average compare with rates experienced in the Bureau of Land Management? With other government agencies?

Answer: We understand the Bureau of Land Management (BLM) does not maintain land title or perform land title examinations in a manner comparable to the title methodology used by the Bureau: a methodology that chronologically maintains complete individual title and beneficial ownership interests and all title and encumbrance documents under a Torrens-like system of title. There is probably no other federal agency which maintains and certifies up-to-date title and ownership of interests held by private (including Indian) individuals on lands under the jurisdiction of the federal government. Thus, there is no basis of comparison of productivity between the Bureau's title programs and those of the BLM.

Question: In addition to improving productivity, an increase of $2.3 million is requested for Land Title and Records. The budget justification indicates (p. 210) that these funds are necessary to reflect the actual operating costs of the program, which in previous years was funded by the Land Records Improvement Program. If this is the case, why aren't the funds transferred from Land Records Improvement to reflect where they are actually expended?

Answer: Funds were not transferred from the Land Records Improvement Program because the $1.4 million requested level for FY 1991 will be used for the following projects: the Unrecorded Documents Project, the Land Records Improvement System Project; the Microfilm Archive Project; and the Cartographic and Geographic Mapping Project. These projects must be completed before the land records based data systems can be updated and completed.

Question: How can $2.3 million be the total cost for these activities when the total funding available for Land Records in FY 1990 was only $1.5 million?

Answer: Based on the workload and appropriate staffing levels, and in order for the Bureau to provide adequate title service to tribes and Indian landowners, the total cost to operate the five Title and Records Offices and three Title Service Offices is approximately $5.1 million.

Question: If $2.3 million is the total cost for this program, will any funds be spent on Lands Records activities in FY 1990? How much?

Answer: No funds will be spent on Land Records Improvement activities in FY 1990. The $1.5 million, together with the $1.5 million from the Land Titles and Records Program, will be used to operate the Title and Records Offices and Title Services Offices at a reduced staffing level.

Question: During FY 1991, the Bureau proposes to undertake an initiative to address the backlog of probate cases. This backlog is now estimated to be 4,800 estates, with another 2,400 estates likely to be identified as the backlog is worked through. With the requested increase of $1,000,000, how much of the backlog does BIA project will be addressed in FY 1991?

Answer: It is estimated that 1,900 estates currently backlogged will be prepared and transmitted to the Department's Administrative Law Judges for probate during FY 1991.

Question: In FY 1990, Congress provided additional funds for cadastral survey to accelerate work on the Arkansas Riverbed. This increase is eliminated in the FY 1990 budget. How much survey work is anticipated to be accomplished in FY 1990 on the Arkansas Riverbed?

Answer: Minimal riverbed mileage will be surveyed in FY 1990. Preliminary activities such as control surveys to tie known points along the riverbed(s) into the existing Public Land Survey System "grid", aerial photography of the 96 miles of the riverbed to visually plot the tracts claimed by the three tribes, and evaluation of previous studies of riverbed movements are necessary before a determination can be made on the location of the riverbed. Preliminary cadastral survey information has been prepared for six or seven high priority tracts in the Fort Smith area. These tracts have on-going trespass activities occurring, and the information has been turned over to the Regional Solicitor's office for use in preparing litigation reports.

Question: What is the projected level of accomplishment for FY 1991?

Answer: The Bureau has been unable to obtain an estimate from BLM of the number of miles of riverbed to be surveyed in FY 1990, as existing data is insufficient to project such numbers. The control survey work will be completed in FY 1991; the actual riverbed surveys will be done subsequent to the completion of those control surveys. Litigation, which is presently in the formative stages, will be further developed based on data from the control surveys and studies of river movement over the past one hundred years.

Question: How much survey work in total remains to be accomplished on the Arkansas Riverbed?

Answer: Much of the work remains to be accomplished since FY 1990 efforts were directed at control surveys, aerial photography work and evaluation of existing data on riverbed movement.

Question: Could additional survey work be completed in FY 1991 if the base level were maintained?

Answer: No. The establishment of control surveys, the comparison of research findings from the studies of riverbed movement of data established by the control surveys, and the preliminary litigatory work constrain the degree of accelerated survey work that can be done on the riverbed. These activities must be accomplished in an interdependent and sequential manner before the riverbed can be legally described and subsequent land management activities by the three tribes begun.

Administrative Staffing

Question: As part of its broad effort to improve the administration of programs for American Indians, the Bureau is requesting an increase of $1,000,000 and 20 FTEs to establish an Office of Audit and Evaluation. One of the proposed charges of the office will be to implement systematic administrative and program reviews and evaluations. How will the functions differ from those of the Inspector General?

Answer: While both the Inspector General and the proposed Office of Audit and Evaluation have similar mandates to identify problems and propose corrective actions needed to rectify problems, the Office of Audit and Evaluation's function extends to assistance in correcting identified deficiencies. The follow-up function is the basic difference between the two organizations. The Inspector General provides assistance to the Bureau in the identification of problems, but that office is unable to provide the on-going staff assistance to develop plans for taking corrective actions or to work on-site assisting in problem resolution. The Office of Audit and Evaluation will not only identify the problem area but will also either provide its own staff to assist with overcoming the deficiency or, because of its organizational placement, ensure that adequate professional and technical staff expertise is made available. Further, this office will provide continual monitoring of corrective actions to ensure that implementation actually resolves the problems identified.

Question: By what means would this office provide "an independent means for carrying out internal audits and evaluations"? Aren't such assessments the responsibility of the Inspector General?

Answer: Among the elements of management -- planning, directing, and controlling -- the last has received the least attention in the Bureau. The Bureau, and all federal agencies, are required to regularly conduct Internal Control Reviews. The Bureau conducts approximately 15-20 such reviews annually. When program and organizational managers have addressed the control function, it has usually been by establishing an in-house evaluation effort. True objectivity often does not find sustenance in such an environment. The Bureau has attempted in the past to rely on each program and functional headquarters entity to establish its own internal evaluation effort; some have proven exemplary, many have not. The Office of Audit and Evaluation will be organizationally separate from any of the program or administrative directorates, thus "independent" of the supervisory control of those managers. It will have no vested interest in any of the programs to be reviewed, thus "independent" of the need to ensure the program's attributes and achievements rather than its weaknesses are reported.

Such assessments are also the responsibility of the Inspector General. The Inspector General will continue to provide an independent assessment of the Bureau's activities and operations. With its own internal evaluation organization, however, the Bureau should not be as "surprised" or unprepared to deal with the results of Inspector General assessments. Identifying the problem internally is a first step toward acceptance that the problem indeed exists. External evaluators provide an objective, open assessment, but they are not vested with a commitment to ensure the weaknesses are overcome in the same manner as is an internal organization. Whether Bureau internal management problems are resolved or not, the Inspector General will survive. If the Office of Audit and Evaluation does not identify, recommend solutions for, and actively work to resolve internal problems, it will not survive; it is part of the total Bureau organization.

Question: How would such an audit office instill greater accountability upon the Bureau's program managers?

Answer: Evaluations done solely by the staff involved in, and responsible for, the programs under review are now routinely conducted within the Bureau. This will not change; managers will still be required to monitor and evaluate how well they deliver program services to the Indian people. These reviews are almost entirely internal to the program being reviewed, however; results are used internally and are not necessarily reported to top Bureau officials. Control over program operations and accountability for correcting problems has not been institutionalized at the higher levels of Bureau management.
This office will create a mechanism for the upper management levels to become aware of problems in the Bureau, and to be able to address them internally.

Moreover, the Office of Audit and Evaluation will be independent of program managers, will have no vested interest in the outcome of its reviews, and will have no personal stigma attached when problems are identified. Knowing that a more objective review will occur and that the results of that review will be made known to the Bureau management officials making performance assessments will instill more accountability at the program management and operations levels as well.

Question: Please provide specific details as to the proposed staffing scheme for the office. What will be the responsibilities of the FTEs requested?

Answer: The Office of Audit and Evaluation will be staffed with professional, administrative, and clerical staff as described below:

Director	Senior Executive Service
Deputy Director	GM-15
Writer-Editor	GS-13
Secretary	GS-08
Chief, Administrative Division	GM-15
Analysts (6)	GS-13
Secretary	GS-07
Chief, Indian Programs Division	GM-15
Analysts (8)	GS-13/14
Secretary	GS-07

The six analysts in the Administrative Division will be specialists in the areas of personnel, accounting, contracting, property, and ADP. The eight in the Program Division will specialize in natural resource programs, economic development, construction/engineering, and tribal government development. Multiple disciplinary job classification series will be used to ensure the broadest possible coverage of the programs and administrative disciplines to be reviewed with some positions possibly falling into the more generalist program analyst or management analyst classification series.

The FTE requested will be responsible for (1) developing, scheduling, conducting, and documenting administrative procedures reviews to ensure that Bureauwide standards, systems, and procedures are adhered to in all administrative activities such as accounting, personnel, property management, automated data processing, and procurement; (2) developing, scheduling, conducting, and documenting program evaluations which will measure the effectiveness and efficiency of operating programs in establishing and meeting goals and objectives as mandated in legislation and as perceived by Indian tribes and Bureau program managers; (3) identifying, selecting, and obtaining administrative and programmatic expertise to participate in the review and evaluation activities; (4) coordinating the activities of the Office of Audit and Evaluation with those conducted by external organizations such as tribal organizations, Congressional Committees, the General Accounting Office, and the Inspector General; and (5) providing follow-up to reviews conducted, whether by the office or others, to ensure that corrective actions are taken in a systematic and timely manner and that results of corrective actions actually resolve the problems identified.

Management Training

Question: For FY 1990, the Bureau is proposing an increase of $200,000 for the consolidated training program (p. 6) in order to improve the presence of women and minorities in the management levels of the organization. What specific training activities would be undertaken if the funding is approved?

Answer: The program will focus on publicizing training and career development awareness including: sponsoring informational seminars featuring women and minority participants of special career programs; publicizing current Bureau-wide and Departmental career development programs and opportunities including Upward Mobility, Bridge Positions, Cooperative Education Program, Career Development Agreement, career ladder, private scholarship and fellowship opportunities, and networking activities. Emphasis will be placed on the types, quality, amounts, and levels of experience and training necessary for staff currently at the entry and midlevels of their job series to advance to supervisory and other key management positions in the organization.

Question: How does BIA define "management levels of the organization"?

Answer: The Bureau definition includes those key management positions identified in its two Executive Management Programs: the Executive Management Development Program (EMDP) and the Senior Executive Service Candidate Development Program (SESCDP). Among these are such positions as: Deputy Assistant

Secretaries; other SES positions; Central Office Division Chiefs; Area Directors; Agency Superintendents; area and agency Administrative Officers; Assistant Area Directors; and Presidents of Bureau post-secondary schools.

Question: What is the present representation of women and minorities at these levels?

Answer: The following table reflects the representation of women and minorities in the Bureau as of December 31, 1989:

	WOMEN			MEN		
	Indian	Other Minorities	White	Indian	Other Minorities	White
Executive Positions	1 (6.3%)	---	1 (6.3%)	13 (81.3%)	---	1 (6.3%)
Key Management Positions (GM 13-15)	42 (9.7%)	---	7 (1.6%)	264 (61.3%)	7 (1.6%)	111 (25.8%)

Question: Has the Bureau consulted with women and minorities presently at these levels to receive their input regarding beneficial training activities?

Answer: A Bureau special initiative project on "Women, Minorities, and persons with Disabilities" has been undertaken and a committee formed to plan training and other strategies for the advancement of women, minorities, and handicapped employees. Current committee membership includes one white SES level female and an Indian female detailed to a key management position.

Question: What funding is proposed department-wide in support of this initiative?

Answer: Attachment C provides the FY 1990 enacted versus the FY 1991 request for all bureaus within the Department. Overall, the Department is requesting $4.3 million in FY 1991 for this initiative, an increase of $2.6 million over the FY 1991 enacted level. The Department is committed to providing Bureau-specific programs to increase opportunities for women and minorities.

ATTACHMENT C

TABLE I

Women and Minorities Funding

($ in millions)

	1990 Enacted	1991 Request	Change
BLM	$0.4	$0.4	--
MMS	--	0.3	+$0.3
OSM	--	0.3	+0.3
BOR	0.7	0.9	+0.2
USGS	--	0.7	+0.7
BOM	--	0.3	+0.3
FWS	0.6	0.6	--
NPS	--	0.5	+0.5
BIA	--	0.2	+0.2
OS	--	0.1	+0.1
TOTAL	$1.7	$4.3	+$2.6

Question: Is this effort within the Bureau part of a larger department-wide initiative?

Answer: Yes, the Bureau's women and minorities initiative is part of the Secretary's Initiative for Women, Minorities and Disabilities which is being implemented Department-wide.

Question: What proportion of employees are represented by women and minorities in each of the bureaus? Are the increased funds proposed consistent with this distribution?

Answer: Of the total 61,000 Interior employees at the end of FY 1989, 15,902 or 26% were members of minority groups and 21,609 or 35% were women. Attachment D shows the number of women and minorities by bureau.

War on Drugs

Question: Consistent with the President's emphasis on anti-drug activities, the Bureau has requested an increase of $4.3 million in FY 1991, for a total level of funding of $16.8 million associated with the "war on drugs". What is the mix within the Bureau for education, prevention and interdiction-type activities?

Answer: The $16.8 million request associated with the "war on drugs" in FY 1991 includes $0.6 million for education (specifically for counselling), $2.8 million for prevention, and $.03 million for interdiction activities. Related activities include $8.3 million for investigations, $3.4 million for corrections, $0.5 million for interaction with state and local agencies, and $0.9 million for research and development activities.

Question: Please provide details regarding the composition of Bureau anti-drug funding for fiscal years 1990 and 1991.

Answer: The following table outlines the composition of Bureau anti-drug funding for fiscal years 1990 and 1991. The broad assumption made in all Bureau of Indian Affairs' programs which address substance abuse is that abuse of alcohol is a much more prevalent problem on reservations than abuse of illegal drugs.

ATTACHMENT D

TABLE II

QUARTERLY TRENDS BY BUREAUS AND OFFICES ACCORDING TO MINORITY GROUP AND WOMEN TOTALS FISCAL YEAR 1989

	BEGIN	GAIN/LOSS BY QUARTERS					END
	FY 89	12/31	3/31	6/30	9/30	NET	FY 89
OS/ODO	1,590	35	(-9)	(-22)	(-5)	(-1)	1,589
Mty	410	15	3	(-4)	(-3)	11	421
Wm	750	29	(-3)	(-9)	(-9)	8	758
BLM	8,787	44	83	50	38	215	9,002
Mty	1,027	11	25	39	3	78	1,105
Wm	2,931	24	22	28	40	114	3,045
OSM	1,131	7	(-10)	(-10)	(-1)	(-14)	1,117
Mty	195	7	2	(-1)	(-6)	2	197
Wm	491	6	(-8)	(-6)	4	(-4)	487
MMS	2,029	13	(-4)	16	7	32	2,061
Mty	305	3	3	9	2	17	322
Wm	889	15	2	7	8	32	921
BOR	6,848	46	96	123	42	307	7,155
Mty	837	15	15	23	15	68	905
Wm	1,915	52	46	47	32	177	2,092
BOM	2,232	7	9	(-2)	(-11)	3	2,235
Mty	281	(-3)	9	6	4	16	297
Wm	674	(-6)	12	(-4)	(-7)	(-5)	669
USGS	8,993	151	68	(-78)	(-50)	91	9,084
Mty	907	7	7	(-9)	1	6	913
Wm	3,001	79	23	(-42)	(-6)	54	3,055
BIA	10,057	(-61)	(-65)	(-89)	(-214)	(-429)	9,628
Mty	8,804	(-40)	(-39)	(-62)	(-198)	(-339)	8,465
Wm	4,297	(-5)	(-37)	(-28)	(-115)	(-185)	4,112
FWS	6,224	43	49	23	50	165	6,389
Mty	695	(-2)	(-2)	2	18	16	711
Wm	2,091	11	25	4	23	63	2,154
NPS	13,071	127	84	63	20	294	13,365
Mty	2,545	2	(-1)	35	(-15)	21	2,566
Wm	4,106	76	55	37	42	210	4,316
DOI	60,962	412	301	74	(-124)	663	61,625
Mty	16,006	15	22	38	(-179)	(-104)	15,902
Wm	21,145	281	137	34	12	464	21,609

Source: Permanent full-time and Permanent part-time data from EEO Data Reports - PAY/PERS System.

FY 1991 Anti-Drug Budget ($000)

Budget Line Item	FY 1990		FY 1991	
	Post Sequest.	Drug Portion	Pres. Request	Drug Portion
EDUCATION				
Substance Abuse Counselors	2,380	$793	1,919	$640
TRIBAL SERVICES				
Office of Alcohol and Substance Abuse.......	248	83	255	85
Judicial Services Center	651	98	660	99
Law Enforcement:				
1. Special Investigation Unit...............	506	304	773	464
2. Indian Police Academy	987	148	1,156	173
3. Special Law Enforcement........	603	300	607	304
4. Marijuana Eradication & Reconnaissance Team (MERT)...............	1,317	1,317	1,357	1,357
5. Tribe/Agency Operations.........	50,312	8,301	56,266	9,378
Social Services				
Emergency Shelters......	990	329	4,500	1,500
GENERAL ADMINISTRATION				
Drug Free Workplace	354	354	292	292
CONSTRUCTION				
Juvenile Detention Facilities............	4,576	2,596	2,500	2,500
TOTAL ANTI-DRUG BUDGET		$14,623		$16,792

Question: The budget discusses Secretary Lujan's commitment to the role the Department can play in the National Drug Control Strategy, including that of a drug-free workplace. What assurances can you give the Committee that actions taken by the Bureau in support of this policy are not in violation of recent court rulings regarding Interior's drug-testing program?

Answer: The Bureau is in strict compliance with Judge Green's guidance and court order. We continue to order pre-employment drug testing, however, we are prohibited from doing random testing of current employees. The Bureau has programs designed to educate employees regarding drug awareness. Also, the guidelines state that the Bureau can order a drug test when there is suspicion or probable cause. This has occurred only once in the Bureau.

Question: In your budget (p. 6), you have described a base adjustment in support of the drug-free workplace. Yet, this base adjustment is not portrayed anywhere in the document. What is the extent of the funding assumed in the base budget of BIA in support of a drug-free workplace?

Answer: The statement on page 6 is inaccurate. The funding for the drug free workplace is actually a program increase which is discussed on page 235. The Bureau's total contribution to the Departmental program is $292,000.

Question: Were these funds transferred from elsewhere in the Bureau's budget?

Answer: Funds were not transferred from other activities to support the Drug Free workplace in FY 1991.

Question: Are the similar adjustments made for all bureaus in the Department? (If not, why not?)

Answer: All bureaus except the Office of Territorial and International Affairs are displaying their share of the costs for the Drug Free workplace in their FY 1991 requests. Some are displayed as program increases and others as adjustments to base.

Question: How is this base adjustment different from the program increase (p. 235) requested as part of the departmental assessments?

Answer: As noted previously, the statement that there was a base adjustment for the Drug Free Workplace is inaccurate. The request of $292,000 will establish a base for this activity for the first time in FY 1991.

Administrative Efficiencies

Question: Dr. Brown, as you know, many of us are concerned about the administrative cost of doing business these days. Your budget proposes a reduction (p. 23) in the funding available for consultants, travel, overtime, supplies, and equipment. Other savings are anticipated due to filling vacant positions in lower grades and allowing vacancies to lapse an additional 30 days. How are these reductions proposed to be allocated across the Bureau's operating programs?

Answer: The reductions have been distributed on the basis of Full Time Equivalent Employment, with the exception of consultant expenditures. The $18,000 reduction associated with consultants was all charged against Education Program Management, as this was the only office reporting expenditures for consultants.

Question: Does allocating these reductions on a pro-rata basis correlate with the actual expenditures for the different activities? For example, education is absorbing approximately 40 percent of these reductions. Does education incur 40 percent of the travel costs of the Bureau?

Answer: We believe that such an approach is logical, although there are undoubtedly other ways to spread the reductions. Given the decentralized nature of the Bureau, however, it would be a very time-consuming exercise to determine how much was spent for each program at each location by object class and apply a proportionate reduction to that program at that location. Education does not incur 40 percent of the bureauwide travel costs. In FY 1989, travel for Education accounted for approximately 30 percent of the total travel obligations in the Operations of Indian Programs account, excluding emergency fire suppression. When obligations for fire suppression are excluded from personnel costs, Education accounts for 43.4 percent of these costs.

Question: As part of the administrative efficiencies, travel costs are assumed to be reduced by $981,000 and supply costs by $917,000. Yet, in the object class distribution (p. 256), the travel category (Object Class 21) is proposed to increase in FY 1991 and the supply category (Object Class 26) is proposed at the same level in FY 1991 as provided in FY 1990. What accounts for this incongruity?

Answer: The reductions were taken against what the Bureau would otherwise have planned to spend in those categories for FY 1991. There are numerous program increases throughout the Operation of Indian Programs account and obligations for these increased activities will fall in several different object class categories, including travel and supplies.

Question: What effect will these reductions have on the Bureau's programs, particularly given that 55 percent of BIA employees are at grade 7 or below?

Answer: The reductions will cause further reductions in spending on travel, supplies, and equipment, and positions that are vacated will have to remain unfilled for a longer period of time, regardless of grade.

Question: An additional administrative consolidation is the Federal Financial System (FFS). Increased costs to the Bureau in FY 1991 total $2.86 million. What is the total amount budgeted for FFS in BIA's FY 1991 budget?

Answer: A total of $4,235,000 is included for the Federal Finance System.

Question: How much has been spent to date in support of this initiative?

Answer: The expenditures to date are as follows:

FY 1988..............	$ 500,000
FY 1989..............	2,212,000
FY 1990 (est.).......	1,375,000

Question: What are the projected outyear costs?

Answer: Out-year operational costs are difficult to project until there is some experience in actually operating the new system. The Bureau expects that because of the increased data entry requirements, an additional 10-20 FTE may be required. One of the major costs of the system will be telecommunications. The entire Federal government is converting to FTS 2000 which will provide voice and data service, therefore, the BIA will convert from our existing telecommunications service to FTS 2000. It is anticipated that the costs of the new and expanded FTS 2000 service will be substantially higher than the costs incurred under the present system.

Question: Is the Bureau now fully operational as a participant in FFS?

Answer: The present schedule calls for the Bureau to begin using FFS in October 1991.

Question: Has participation in FFS resulted in savings elsewhere in the Bureau budget? Where are these reflected?

Answer: The Bureau does not anticipate that there will be any savings associated with the operation of FFS. In fact, costs can be expected to increase slightly at least through FY 1993.

Question: The budget assumes savings of $1.3 million for postage costs, associated with the installation of postage meters in almost all Bureau locations. How has the installation of postage meters reduced costs?

Answer: Prior to having postage meters, mail surveys were conducted annually and billings from the Postal Service were based on these surveys. Meters reflect actual costs, rather than those costs derived from sampling techniques.

Question: On what basis was the $1.3 million estimate formulated?

Answer: The Bureau has received refunds from the Postal Service for fiscal years 1987 and 1988. During FY 1989, BIA staff met with Postal Service staff to review this situation and to revise the estimates downward to a more realistic level based on the actual costs for FY 1987 and FY 1988.

Question: Where will these costs be absorbed if these savings do not materialize?

Answer: As the funds remaining in the budget for postage costs represent an increase of about $150,000 over the actual audited costs for FY 1988, it is unlikely that there will be a shortfall in postage. Should that occur, however, the balance would come from end-of-year unobligated balances.

Pay Costs

Question: Dr. Brown, the administrative situation is exacerbated by the Bureau's failure to budget adequately for the increased costs to be incurred in FY 1991 of the federal employees pay raise, scheduled to take effect January 1, 1991. The budget includes only $4.8 million, or 40 percent, of the total cost of this pay raise. Thus, Bureau programs are expected to absorb an additional $7.2 million in pay costs. What effect will these absorptions have on the operating program of the Bureau?

Answer: There will be longer delays in filling vacancies, some positions will not be filled at all, and some positions will be filled with lower-graded employees.

Question: How will the reductions be distributed?

Answer: The budget does not distribute the reduction; it distributes the allowance for the pay increase. Each program will be required to operate its programs within the funds budgeted, there will be no reallocation among programs as a result of pay absorption.

Budget Request History

Question: Please provide additional information regarding the Bureau's request to the Department for funding in the following program areas:

Tribal Services -- Self-Determination Services (cut $22.2 million by OMB)
Economic Development -- Tribe/Agency Operations (cut $8 million by OMB)
Natural Resources -- Forestry (cut $5.7 million by OMB)
Employee Compensation Payments (cut $10.8 million by OMB)
Construction -- Buildings and Utilities (cut $5.6 million by OMB)
Construction -- Irrigation Systems (cut $6 million by OMB)
Construction -- Road Maintenance (cut $14.7 million by OMB)

Answer: See Attachment E.

ATTACHMENT E

DEPARTMENT OF THE INTERIOR
FY 1991 President's Budget
Budget History Table
(in thousands of dollars)

BUREAUS/ACCOUNTS/ ACTIVITIES/SUB-ACTIVITIES	Request to Department	Request to OMB	Request to Congress
BUREAU OF INDIAN AFFAIRS			
Operation of Indian Programs			
Education			
School operations	232,328	232,328	231,948
Johnson O'Malley education assistance	20,472	20,472	20,548
Continuing education	26,312	26,312	29,672
Tribe/Agency operations	31,044	31,044	31,122
Subtotal, Education	310,156	310,156	313,290
Tribal Services			
Tribal government services	7,756	7,756	7,847
Social services	92,662	92,662	93,128
Law enforcement	5,322	5,322	5,373
Self-Determination services	71,687	71,687	49,366
Employment development	2,099	2,099	2,116
Tribe/Agency operations	139,269	139,269	144,351
Subtotal, Tribal Services	318,795	318,795	302,181
Navajo/Hopi settlement program	1,002	1,002	1,027
Economic Development and Employment Programs			
Business enterprise development	13,341	13,341	10,866
Road maintenance [transferred to Constr.]	0	0	0
Tribe/Agency operations	11,633	11,633	3,678
Subtotal, Economic Development and Employment Programs	24,974	24,974	14,544
Natural Resources Development			
Natural resources, general	3,150	3,150	3,159
Agriculture	12,219	12,219	11,770
Forestry	20,949	20,949	15,207
Water resources	9,869	9,869	7,693
Wildlife and parks	23,784	23,784	23,482
Minerals and mining	4,757	4,757	4,557
Irrigation operation and maintenance	0	0	0
Tribe/Agency operations	50,005	50,005	53,963
Subtotal, Natural Resources Development	124,733	124,733	119,831
Trust Responsibilities			
Rights protection	17,218	17,218	17,560
Real estate and financial trust services	25,980	25,980	26,248
Tribe/Agency operations	23,791	23,791	24,281
Subtotal, Trust Responsibilities	66,989	66,989	68,089
Facilities Management	87,369	87,369	87,161

BUREAUS/ACCOUNTS/ ACTIVITIES/SUB-ACTIVITIES	Request to Department	Request to OMB	Request to Congress
General Administration			
Management and administration	48,009	48,009	48,096
ADP services	24,053	24,053	20,663
Employee compensation payments 1/	22,270	22,270	11,449
Program management	8,781	8,781	7,755
Consolidated training program	1,090	1,090	1,040
Tribe/Agency operations	22,688	22,688	23,059
Liability insurance study	0	0	0
Subtotal, General Administration	126,891	126,891	112,062
Tribal Contract Conversion	0	0	0
One additional work day 2/	1,300	1,300	0
Total, Operation of Indian Programs	1,062,209	1,062,209	1,018,185
Construction			
Buildings and Utilities	40,835	40,835	35,258
Fish Hatcheries	0	0	0
Irrigation Systems	8,264	8,264	2,310
Land Acquisition	0	0	0
Housing	20,063	20,063	20,224
Employee housing	1,500	1,500	1,000
Road maintenance and construction	51,998	51,998	37,307
Contract Support	9,815	9,815	7,000
Total, Construction	132,475	132,475	103,099
Indian Loan Guaranty and Insurance Fund			
Bond Escrow	3,500	3,500	0
Appropriation, current	7,187	7,187	11,487
Total, Indian Loan Guaranty and Insurance Fund	10,687	10,687	11,487
Payment to the Navajo Rehabilitation Trust Fund			
Appropriation, current	0	0	0
Miscellaneous Payments to Indians			
White Earth Land Settlement Act (Admin.)	513	513	526
Program Administration	198	198	197
Old Age Assistance	544	544	584
Payment to Tohono O'Odham Nation	0	0	0
Aleutian - Pribilof Restitution	12,300	12,300	12,300
Water Rights Settlement	38,800	38,800	38,800
Hoopa-Yurok Settlement	5,150	5,150	0
Puyallup settlement	0	0	0
Total, Miscellaneous Payments to Indians	57,505	57,505	52,407
Total, Bureau of Indian Affairs	1,262,876	1,262,876	1,185,178

1/ Payments include unemployment compensation, workers compensation, and the Federal Employees' Retirement System (FERS). The request to Congress reflects a decrease due to having distributed the FERS costs to all Bureau programs.

2/ The cost for one additional work day was distributed to all Bureau programs in the Request to Congess.

QUESTIONS SUBMITTED BY SENATOR DENNIS DECONCINI

Law Enforcement

Question: Under Tribal Services - Law Enforcement, the discussion regarding Central Office operations indicates that the office is responsible for the management and operation of the Integrated Police/Law Enforcement Management Systems (IPLEMS). Do all BIA and tribal law enforcement programs use the IPLEMS?

Answer: Yes, one hundred terminals have been installed throughout the country. Those locations without terminals batch their incident reports and send them to the nearest agency with a terminal for encoding. All Bureau and tribal law enforcement departments are required to use IPLEMS by P.L. 100-690, the Uniform Crime Reporting Act.

Question: How are field sites linked to the main computer(s)?

Answer: Nine area offices and the central office are linked to the mainframe computer in Albuquerque. All field (agency) terminals are linked to their area offices.

Question: What was the acquisition cost for IPLEMS?

Answer: The initial cost of the acquisition contract was $3.1 million. This does not include data communication costs.

Question: What are the annual operational costs associated with this system?

Answer: The Bureau anticipates that the system will become fully operational during FY 1990. The operating costs associated with the system for FY 1990 will be available after the close of the fiscal year, but they will not represent the entire annual cost of the system.

Question: Before IPLEMS, how was workload data determined?

Answer: Workload data was collected manually at the local level and entered into a computer database for summarization.

Question: Within the Central Office Operations - Law Enforcement Services Unit, the justification describes the responsibilities of the Special Investigation Unit. Why isn't the Special Investigation Unit (SIU) responsible for investigating other federal major crimes which don't involve narcotics violations, sexual abuse and child abuse or exploitation cases?

Answer: The SIU was established in compliance with P.L. 99-570, the Anti-Drug Abuse Act of 1986, to specifically address child abuse and narcotic investigations. SIU is a highly mobile investigative unit designed to respond to long term investigations which exceed local capabilities.

Question: Other than sexual abuse and child abuse or exploitation cases, what is the functional difference between the SIU activities and the activities proposed under the Substance Abuse program discussed on page 83 of the budget justification?

Answer: The Marijuana Eradication and Reconnaissance Team (MERT) discussed on page 83 in the Justification was also established in compliance with P.L. 99-570 and specializes in drug interdiction and marijuana eradication.

Question: The justification states that one of the responsibilities of the Police Operations Branch within Central Office is that it "...contracts with tribes for law enforcement programs." Please provide a more detailed explanation of how this responsibility is carried out by this Branch. For example, what services are contracted, how many tribal contracts have been negotiated by this branch and what is the total dollar amount of contracts entered into with tribes by this Branch in FY 1989 and FY 1990?

Answer: The Branch of Police Operations provides broad oversight and develops policies and procedures for both Bureau-operated and tribally-contracted programs. Tribal contracts are not accomplished at this level. We agree that the wording is misleading, and it will be corrected in future budget submissions.

Question: Also, how many law enforcement programs have been inspected and evaluated by this branch since FY 1989?

Answer: Two programs were reviewed in FY 1989.

Question: List the tribes and provide a copy of the guidelines for self inspection used to assist tribal police in evaluating performance.

Answer: The law enforcement programs reviewed in 1989 were Ramah-Navajo and Salt River.

A copy of the self-inspection guidelines will be provided to the Committee staff.

Question: Beginning with FY 1989, list the courses and locations where outreach training was conducted by the Police Academy.

Answer: The "outreach" training referred to in the Justifications includes such courses as the Drug Abuse Resistance Education Program (DARE) which train police officers who then go back to the local level and provide training and service to others.

Question: Other than the Police Academy providing training on the DARE program, how and where has the Bureau formally introduced DARE?

Answer: DARE was formally introduced to the Area Special Officers in a memorandum dated May 6, 1988 from the Chief, Division of Law Enforcement Services. In June, 1988, a publication was sent to the Area Special Officers entitled "The U.S. Department of Justice, Office of Justice Programs". DARE has also been used extensively in Bureau-funded schools.

Question: The justification shows an Area by Area distribution of the Area Office Operations funds which are being requested for FY 1991. Since the Navajo Tribe has contracted for all law enforcement services what will the Navajo Area Office request of $88,000 under the Area Office Operations account be used for?

Answer: The $88,000 will fund two full-time area office positions to monitor the contract and provide technical assistance to the tribe.

Criminal Investigator	GS 1811-12
Secretary	GS 318-05

Question: What is the rationale behind the reductions for the Albuquerque and Phoenix Area Offices?

Answer: The reductions in these two areas for law enforcement reflect area management decisions to transfer funding to other area programs. In Albuquerque, funds were shifted to Tribal Government Services for a shared clerical position. In the Phoenix Area, the Division of Tribal Services reduced a secretarial position to make use of available funding within the Division, which includes the law enforcement, social services, housing, and credit and finance programs.

Question: Please provide the priorities established by Phoenix and Albuquerque Areas so we may see where area law enforcement activities rank for these two area offices.

Answer: See Attachment F.

ATTACHMENT F

INDIAN PRIORITY SYSTEM

DECISION RANKING CHART
(DOLLARS IN THOUSANDS AND TENTHS; FTE = FULL-TIME EQUIVALENT)

NAME: PHOENIX DIRECT OPS FY: 1991 ADDRESS: P.O. BOX 7007
AREA: PHOENIX LOCATION CODE: H50-01 CITY: PHOENIX STATE: AZ

PRIORITY RANKING	PACKAGE CODE	PROGRAM TITLES	INCREMENT		CUMULATIVE	
			$AMT	FTE	$AMT	FTE
1	651	OTHER REAL ESTATE SERVICES	336.4	5.0	336.4	5.0
2	711	EXECUTIVE DIRECTION	120.0	2.0	456.4	7.0
3	721	ADMINISTRATIVE SERVICES	2055.1	62.0	2511.5	69.0
4	411	NATURAL RESOURCES, GENERAL	145.0	2.0	2656.5	71.0
5	171	COMMUNITY SERVICES, GENERAL	70.0	1.0	2726.5	72.0
6	421	AGRICULTURE	80.0	2.0	2806.5	74.0
7	241	LAW ENFORCEMENT	70.0	1.5	2876.5	75.5
8	211	OTHER AID TO TRIBAL GOVERNMENT	61.0	1.0	2937.5	76.5
9	731	SAFETY MANAGEMENT	52.0	1.0	2989.5	77.5
10	481	FOREST PGM MGMT (RELATED FUNCT.)	125.0	3.0	3114.5	80.5
11	231	SOCIAL SERVICES	90.0	2.0	3204.5	82.5
12	321	CREDIT AND FINANCING	80.0	2.0	3284.5	84.5
13	511	WILDLIFE MGMT. & DEVELOPMENT	50.0	.0	3334.5	84.5
14	652	OTHER REAL ESTATE SERVICES	21.6	1.0	3356.1	85.5
15	712	EXECUTIVE DIRECTION	54.0	1.0	3410.1	86.5
16	722	ADMINISTRATIVE SERVICES	237.4	9.0	3647.5	95.5
17	172	COMMUNITY SERVICES, GENERAL	2.7	.0	3650.2	95.5
18	422	AGRICULTURE	21.0	1.0	3671.2	96.5
19	242	LAW ENFORCEMENT	6.0	.0	3677.2	96.5
20	232	SOCIAL SERVICES	12.0	.0	3689.2	96.5
21	482	FOREST PGM MGMT (RELATED FUNCT.)	35.0	1.0	3724.2	97.5
22	713	EXECUTIVE DIRECTION	46.0	1.0	3770.2	98.5
23	723	ADMINISTRATIVE SERVICES	182.4	7.0	3952.6	105.5
24	173	COMMUNITY SERVICES, GENERAL	27.3	1.0	3979.9	106.5
25	243	LAW ENFORCEMENT	12.0	.5	3991.9	107.0
26	233	SOCIAL SERVICES	42.0	1.0	4033.9	108.0
27	483	FOREST PGM MGMT (RELATED FUNCT.)	22.0	.0	4055.9	108.0
28	423	AGRICULTURE	10.0	.0	4065.9	108.0
29	733	SAFETY MANAGEMENT	13.0	1.0	4078.9	109.0
30	323	CREDIT AND FINANCING	35.0	1.0	4113.9	110.0
31	654	OTHER REAL ESTATE SERVICES	29.0	.0	4142.9	110.0
32	714	EXECUTIVE DIRECTION	10.0	.0	4152.9	110.0
33	724	ADMINISTRATIVE SERVICES	79.7	3.0	4232.6	113.0
34	174	COMMUNITY SERVICES, GENERAL	15.0	.0	4247.6	113.0
35	424	AGRICULTURE	149.0	3.0	4396.6	116.0
36	244	LAW ENFORCEMENT	12.0	.0	4408.6	116.0
37	214	OTHER AID TO TRIBAL GOVERNMENT	9.0	.0	4417.6	116.0
38	414	NATURAL RESOURCES, GENERAL	10.0	.0	4427.6	116.0
39	734	SAFETY MANAGEMENT	8.0	.0	4435.6	116.0
40	484	FOREST PGM MGMT (RELATED FUNCT.)	18.0	.0	4453.6	116.0
41	814	NEW DIRECT RENTAL OF FACILITIES	50.0	.0	4503.6	116.0

NAME: ALBUQUERQUE DIRECT OPS FY: 1991 ADDRESS: 615 N. FIRST ST.
AREA: ALBUQUERQUE LOCATION CODE: N00-31 CITY: ALBUQUERQUE STATE: NM

PRIORITY RANKING	PACKAGE CODE	PROGRAM TITLES	INCREMENT		CUMULATIVE	
			$AMT	FTE	$AMT	FTE
1	711	EXECUTIVE DIRECTION	357.0	4.0	357.0	4.0
2	721	ADMINISTRATIVE SERVICES	2028.0	55.0	2385.0	59.0
3	411	NATURAL RESOURCES, GENERAL	40.0	.0	2425.0	59.0
4	651	OTHER REAL ESTATE SERVICES	47.0	.0	2472.0	59.0
5	722	ADMINISTRATIVE SERVICES	36.0	1.0	2508.0	60.0
6	612	TRUST SERVICES, GENERAL	77.0	2.0	2585.0	62.0
7	652	OTHER REAL ESTATE SERVICES	36.0	1.0	2621.0	63.0
8	412	NATURAL RESOURCES, GENERAL	70.0	2.0	2691.0	65.0
9	232	SOCIAL SERVICES	79.0	2.0	2770.0	67.0
10	233	SOCIAL SERVICES	1.0	.0	2771.0	67.0
11	213	OTHER AID TO TRIBAL GOVERNMENT	109.0	3.0	2880.0	70.0
12	243	LAW ENFORCEMENT	100.0	2.0	2980.0	72.0
13	323	CREDIT AND FINANCING	44.0	1.0	3024.0	73.0
14	733	SAFETY MANAGEMENT	44.0	1.0	3068.0	74.0
15	724	ADMINISTRATIVE SERVICES	100.0	2.0	3168.0	76.0
16	654	OTHER REAL ESTATE SERVICES	12.0	.0	3180.0	76.0
17	414	NATURAL RESOURCES, GENERAL	26.0	.0	3206.0	76.0
18	234	SOCIAL SERVICES	51.0	1.0	3257.0	77.0
19	214	OTHER AID TO TRIBAL GOVERNMENT	37.0	.0	3294.0	77.0
20	244	LAW ENFORCEMENT	35.0	.0	3329.0	77.0
21	324	CREDIT AND FINANCING	16.0	.0	3345.0	77.0
22	734	SAFETY MANAGEMENT	21.0	1.0	3366.0	78.0

Tribal Courts

Question: I note that under the All Other Aid To Tribal Government, Central Office Operations, element there is a judicial services program. Then under Tribal Courts there is the Judicial Services Center. Beginning in FY 1989, the central office, under the Tribal Courts element, has requested and received funding for a Judicial Services Center. For FY 1990 and 1991, 3 FTEs are listed. This program is to be located in the field. Explain how the functions carried out by the Central Office Judicial Services Program differ from those carried out by the Judicial Services Center.

Answer: The central office staff is responsible for establishing policy, writing regulations for the tribal courts function, awarding national contracts for training and issuing the Indian Reporter to all tribal courts.

The role of the Judicial Services Center was to provide training, review existing tribal courts, and provide technical assistance for improvements through on-site visits. The Center was to function as a repository for information and statistical data collected from tribal courts on key elements such as caseload, personnel, equipment, and other information required to keep track of existing courts.

The Judicial Service's Branch Chief position was vacant between June 1989 and February 1990, and no action was taken to establish the Center. The position was filled in February 1990. After reviewing the function and purpose of the Center, the Branch Chief recommended that the Center functions could be administered better from one office rather than half in Albuquerque and half in Washington.

Question: Please explain how the judicial systems serving the tribes benefit from having these two different programs.

Answer: The Judicial Services Center was intended to perform on-site visits to existing tribal courts to perform reviews and provide technical assistance for improvements. The Judicial Services Branch will provide these functions as soon as staff is hired.

Question: How much of the $1.731 million and 28 FTEs requested for Central Office Operations budget will be devoted to the Judicial Services program activities and responsibilities?

Answer: The funding level for the Judicial Services Branch is $200,000 and 3 FTE, and $660,000 and 3 FTE for the Judicial Services Center. The Bureau is proposing that the funding and functions be combined and administered in the central office.

Question: At the Tribal Court Systems and Indian Civil Rights Act hearing before the Select Committee on Indian Affairs on January 22, 1988, a BIA representative provided testimony on the need to strengthen tribal courts in the areas of funding, training, recordkeeping and appellate systems. Aside from training, what efforts and progress has the bureau made to address the other three areas?

Answer: With respect to appellate courts, the central office has funded appellate courts from Special Tribal Courts funding in the following areas: Northern Plains Appellate Court in the Aberdeen Area; Intertribal Appellate Court in the Billings Area; Northwest Intertribal Appellate Court in the Portland Area; and the Southwest Intertribal Appellate Court in the Albuquerque Area. Funding in the amount of $415,000 has been distributed for FY 1990 to cover the cost of these appellate courts. In FY 1992, and subsequent years, these funds will no longer be handled by the central office, but will be distributed to the respective area offices at the beginning of each fiscal year. Funding has also been provided to assist the National American Indian Judge's Association to host an annual conference.

We do encourage tribes to be aware of the functions of the tribal courts with respect to the establishment of tribal forums on the reservation to handle all intertribal disputes. In response, some tribes have chosen to make tribal courts a higher priority within their Indian Priority System (IPS) base.

Recordkeeping and related management problems are addressed through on-site visits by Bureau staff to individual tribal courts, though this has not been emphasized as a special initiative in the program.

Question: What specific initiatives have been undertaken by the BIA in the 2 years since the agency representative identified these areas of need within the tribal court system?

Answer: Those actions which have been taken within the last two years are described above. This office is currently proposing new initiatives to address the needs of tribal courts in the future.

Construction - Law Enforcement Projects

Question: The budget justification requests $2.5 million for a "...new construction initiative ..." which "...will be based on the completed PONI studies on the highest ranked of the 46 juvenile detention facilities, as published in the Federal Register." Does the ranking as published in the Federal Register constitute the priority order in which the 46 facilities will be funded for planning/design and construction?

Answer: Depending upon the results of the PONI studies, the final ranking will be made.

Question: Explain the standards and criteria which were used to determine the priority order of the 46 facilities as published.

Answer: See Attachment G.

ATTACHMENT G

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

FEB 25 1988

Law Enforcement Services
MS 1342

MEMORANDUM

To: All Area Directors

From: Assistant Secretary - Indian Affairs

Subject: Applications for Juvenile Detention and Rehabilitation Centers

As we continue to implement Public Law 99-570, the Anti-Drug Abuse Act of 1986, we are now ready to review our requirements for construction or renovation of new or existing Juvenile Detention Centers.

As you recall the Bureau of Indian Affairs (BIA) initiated a Planning of New Institutions (PONI) program last year to insure full participation of community leaders in the process and consideration of all factors and alternatives in the initial planning phase. Because there are some unique requirements for juvenile facilities, the Division of Law Enforcement Services (LES) has expanded on the PONI first phase application form to cover these requirements.

Evaluation criteria have been established to prioritize these applications as outlined below:

JUVENILE DETENTION FACILITIES (P.L. 99-570)
EVALUATION CRITERIA AND PERCENTAGE WEIGHT FACTORS

I. Extent of Juvenile Drug Abuse Problem (20%): This category is used to evaluate the severity of criminal activity due to juvenile alcohol or substance abuse in the service area of the facility.

  A. Evaluate the number of juvenile arrests related to alcohol or substance abuse.

  B. Provide the total number of juvenile arrested in the last calendar year.

II. Population Served by the Proposed Facility (15%): This category is used to evaluate the service population.

  A. Identify the total population of the tribe(s) to be served by the proposed facility.

  B. Identify the BIA Agency(s) to be served by the propdsed facility.

  C. Evaluate whether the proposed facility can serve multiple Agencies and/or Tribes.

III. Location of Existing Detention Facilities (10%): This category is used to evaluate the proximity of existing detention facilities to the service area. This may be tribal or non tribal or other detention facilities on or off a reservation.

A. Evaluate the commuting distance from the population center of the service area to the existing detention center(s) being utilized.

B. Evaluate the commuting distance from the population center to an alternative off reservation juvenile detention facility.

IV. Renovation of Existing Facility (10%): This category is used to evaluate the suitability of an existing BIA facility for renovation.

A. Evaluate whether the facility is suitable for renovation relative to location within the service area.

B. Evaluate the suitability of renovating the proposed facility as it relates to the BIA Juvenile Detention Standards.

V. Funding Available for Staffing and Operations (10%): This category is used to evaluate sources of funds to staff and operate the proposed detention facility.

Applicants should provide a narrative summary which outlines the proposed staffing and funding for the daily operation of the program:

A. Evaluate the amount of identified funds as related to staffing and operating needs of a facility of the size and type proposed.

B. Evaluate the stability of the funding sources identified as to their possibility for continued future years support.

VI. Identification of Pending Court Mandates (15%): This information is used to evaluate compliance with detention facility standards or failure to meet law and regulations.

Identify and describe any Federal District Court or tribal mandates directing Tribal/Agency compliance to meet law(s) and/or regulations.

VII. Detention Standards Compliance and Building Codes (15%): This category is to evaluate non compliance of detention facilities to meet BIA Juvenile Detention Standards and other health and safety building codes.

A. Provide an evaluation report on non-compliance to BIA Law Enforcement Services Juvenile Detention Standards and applicable health and safety building codes. A current IHS Environmental Health Survey Report or other inspection report of the present facility should supplement the report.

VIII. Building Site (5%): This category is to evaluate availability of building site and utilities.

Identify location of nearest utilities (sewer, water, power, etc).

identify the site location (map) in reference to the community or reservation, and identify the site physiography (size, structures, roads, slope/topography, etc., if available).

I would like to emphasize that even though the legislation provides for the construction of detention facilities, no additional staffing monies are included within the BIA appropriation.

For those tribes who have developed, or are in the process of developing, a Tribal Action Plan (TAP), and decide that a Juvenile Detention Facility is a priority for the reservation, please be sure to include this as a part of the TAP.

An application form is enclosed which when completed will provide sufficient data to evaluate priorities. Please insure that they are distributed to all tribes.

I would appreciate a response by April 1, 1988, so that decisions on project selections for Juvenile Detention facilities can be completed soon thereafter.

The responses and applications should be sent to:

Warren LeBeau, Detention Specialist
Bureau of Indian Affairs
Indian Police Academy
Pinal Air Park - Building 18
Marana, Arizona 85653

Questions pertaining to the application and evaluation criteria can be directed to either Mr. Warren LeBeau at (602) 629-5406 or Robert Montoya, Architect, BIA, Office of Facilities Management at (505) 766-0653.

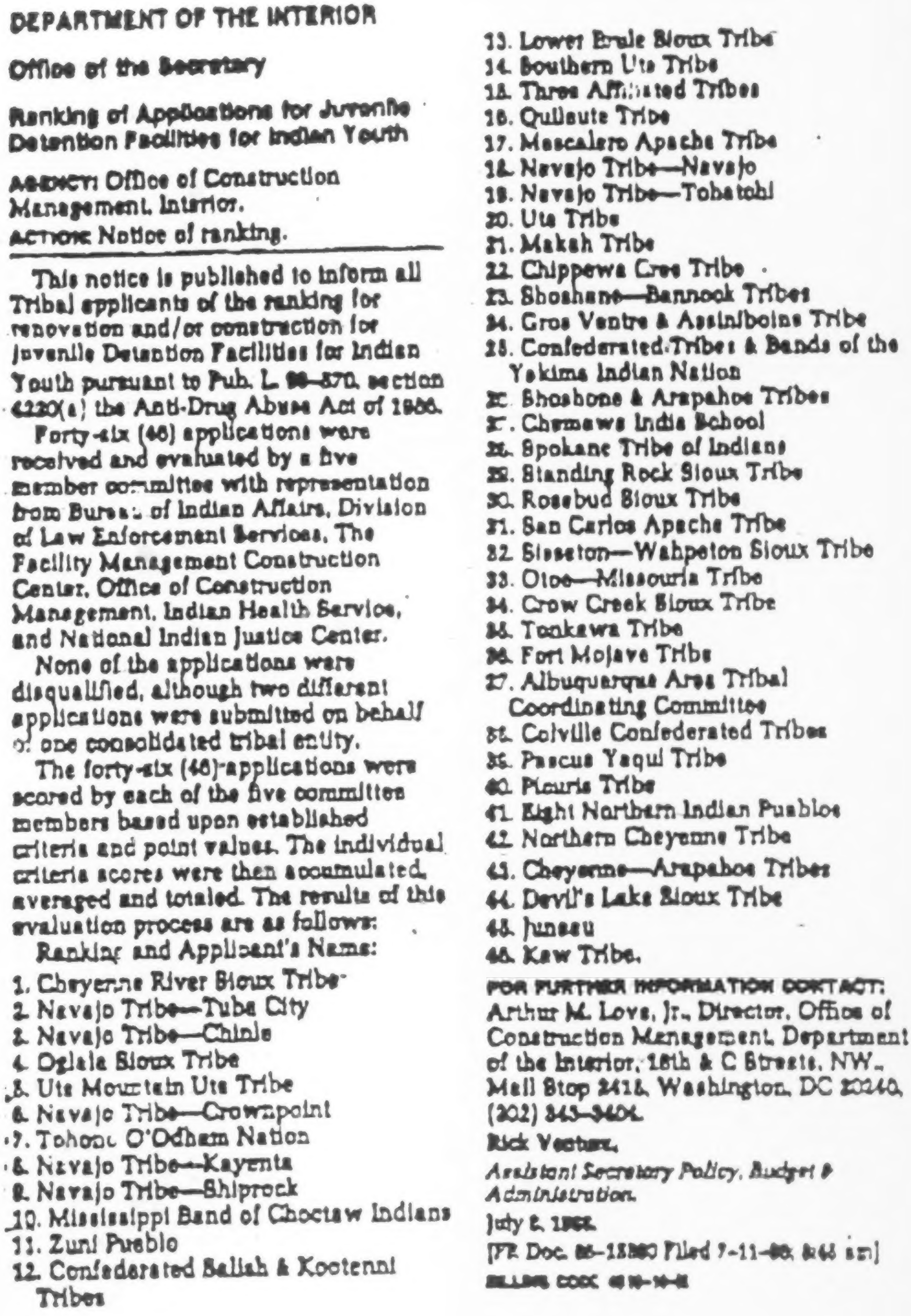
Question: Please provide a copy of this list and explain which of the top ranked proposed projects have completed PONI studies.

Answer: See Attachment H. The following projects have completed PONI studies.

- Cheyenne River Sioux Tribe
- Oglala Sioux Tribe
- Fort Peck - Not on the original list

ATTACHMENT H

[From the Federal Register, July 12, 1988]



DEPARTMENT OF THE INTERIOR

Office of the Secretary

Ranking of Applications for Juvenile Detention Facilities for Indian Youth

AGENCY: Office of Construction Management, Interior.

ACTION: Notice of ranking.

This notice is published to inform all Tribal applicants of the ranking for renovation and/or construction for Juvenile Detention Facilities for Indian Youth pursuant to Pub. L. 99-570, section 4220(a) the Anti-Drug Abuse Act of 1986.

Forty-six (46) applications were received and evaluated by a five member committee with representation from Bureau of Indian Affairs, Division of Law Enforcement Services, The Facility Management Construction Center, Office of Construction Management, Indian Health Service, and National Indian Justice Center.

None of the applications were disqualified, although two different applications were submitted on behalf of one consolidated tribal entity.

The forty-six (46) applications were scored by each of the five committee members based upon established criteria and point values. The individual criteria scores were then accumulated, averaged and totaled. The results of this evaluation process are as follows:

Ranking and Applicant's Name:

1. Cheyenne River Sioux Tribe
2. Navajo Tribe—Tuba City
3. Navajo Tribe—Chinle
4. Oglala Sioux Tribe
5. Ute Mountain Ute Tribe
6. Navajo Tribe—Crownpoint
7. Tohono O'Odham Nation
8. Navajo Tribe—Kayenta
9. Navajo Tribe—Shiprock
10. Mississippi Band of Choctaw Indians
11. Zuni Pueblo
12. Confederated Salish & Kootenai Tribes
13. Lower Brule Sioux Tribe
14. Southern Ute Tribe
15. Three Affiliated Tribes
16. Quileute Tribe
17. Mescalero Apache Tribe
18. Navajo Tribe—Navajo
19. Navajo Tribe—Tohatchi
20. Ute Tribe
21. Makah Tribe
22. Chippewa Cree Tribe
23. Shoshone—Bannock Tribes
24. Gros Ventre & Assiniboine Tribe
25. Confederated Tribes & Bands of the Yakima Indian Nation
26. Shoshone & Arapahoe Tribes
27. Chemawa India School
28. Spokane Tribe of Indians
29. Standing Rock Sioux Tribe
30. Rosebud Sioux Tribe
31. San Carlos Apache Tribe
32. Sisseton—Wahpeton Sioux Tribe
33. Otoe—Missouria Tribe
34. Crow Creek Sioux Tribe
35. Tonkawa Tribe
36. Fort Mojave Tribe
37. Albuquerque Area Tribal Coordinating Committee
38. Colville Confederated Tribes
39. Pascua Yaqui Tribe
40. Picuris Tribe
41. Eight Northern Indian Pueblos
42. Northern Cheyenne Tribe
43. Cheyenne—Arapahoe Tribes
44. Devil's Lake Sioux Tribe
45. Juneau
46. Kaw Tribe.

FOR FURTHER INFORMATION CONTACT: Arthur M. Love, Jr., Director, Office of Construction Management, Department of the Interior, 18th & C Streets, NW., Mail Stop 2418, Washington, DC 20240, (202) 343-3404.

Rick Ventura,

Assistant Secretary Policy, Budget & Administration.

July 8, 1988.

[FR Doc. 88-15380 Filed 7-11-88; 8:45 am]

BILLING CODE 4310-10-M

[From the Federal Register, June 7, 1989]

Bureau of Indian Affairs

Ranking of Applicants for Planning of New Institutes

ACTION: Notice of ranking.

SUMMARY: This notice is published to inform all Tribal applicants of the ranking for Planning of New Institutions (PONI) requests for construction and/or renovations of detention facilities in Indian country. The notice requesting applications was published in the Federal Register on December 8, 1988 (Vol. 53, No. 237, page 49796).

Thirty-seven (37) applications were received, four of which were not graded since they were postmarked after the established deadline of February 13, 1989.

Two other applications were not graded because they had already completed PONI programs. These two applications will be maintained at the Division of Law Enforcement Services Office until the 1989 PONI programs have been completed. Following that they will be in competitive status with the other applicants for the 1989 construction/renovation selection. Thirty-one applicants were received and evaluated by a five member committee with representation from Bureau of Indian Affairs, Division of Law Enforcement Services, Division of Drug, Alcohol and Substance Abuse, and the Branch of Judicial Services.

The thirty-one applications were scored by each of the five committee members based upon established criteria and point values. The individual criteria scores were then accumulated, totaled and averaged. The results of this evaluation process are as follows:

Ranking and Applicant's Name

1. Sac and Fox Nation of Oklahoma
2. Ute Mountain Ute Tribe
3. Gila River Indian Community
4. Salt River Pima/Maricopa Indian Community
5. Colville Confederated Tribes
6. Confederated Tribes of the Umatilla Indians
7. Eight Northern Pueblos
8. San Carlos Apache Tribe
9. Three Affiliated Tribes of Fort Berthold
10. Mississippi Band of Choctaw Indians
11. Blackfeet Nation
12. Mescalero Apache Tribe
13. Spokane Tribe of Indians
14. Pascua Yaqui Tribe
15. Native Village of Kotzebue
16. Mille Lacs Band of Chippewa Indians
17. Lower Brule Sioux Tribe
18. Fort Mojave Tribe
19. Oglala Sioux Tribe
20. Navajo Nation—Shiprock
21. Shoshone and Arapaho Tribes
22. Colorado River Indian Tribes
23. Devil's Lake Sioux Tribe
24. Navajo Nation—Crownpoint
25. Navajo Nation—Chinle
26. Confederated Salish and Kootenai Tribes
27. Navajo Nation—Fort Defiance
28. Fort Belknap Agency
29. Cocopah Indian Tribe
30. Navajo Nation—Tuba City
31. Reno Sparks Indian Colony

FOR FURTHER INFORMATION CONTACT: Mr. Warren LeBeau, Staff Assistant Detention, Division of Law Enforcement Services, Marana, Arizona. (502) 629-6408 or Mr. Robert Montoya, Facility Management and Construction Center, (505) 766-2848.

W.P. Ragsdale,

Assistant Secretary—Indian Affairs.

[FR Doc. 89-13413 Filed 6-6-89; 8:45 am]

BILLING CODE 4310-02-M

Question: In any case where a project ranks high on the list but does not have a completed PONI study at this time, please provide a timetable for completion of its PONI study.

Answer: The Bureau intends to place the top ten ranked projects into PONI planning studies. Of those, the three mentioned above are complete and the remaining seven are scheduled as follows:

Project	Scheduled PONI Completion
Navajo Tribe - Tuba City	4/30/90
Navajo Tribe - Chinle	4/30/90
Ute Mountain Ute	7/15/90
Navajo Tribe - Crownpoint	4/30/90
Tohono O'Odham Nation	9/30/90
Navajo Tribe - Kayenta	4/30/90
Mississippi Band of Choctaw Indians	7/15/90

Question: Please indicate how the $2.5 million requested for FY 1991 will be distributed among the top ranked projects which are not high on the published priority list.

Answer: The $2.5 million requested in FY 1991 will be combined with other available juvenile detention funds to construct the listed projects in rank order. The number of projects which will be constructed will not be known until the PONI studies are complete. This is because one of the end products of the PONI study is a project construction budget.

Question: Please outline the plans which have been made for those juvenile detention projects which are not high on the published priority list.

Answer: Until such time as the initial projects have been designed and constructed, no additional plans are being made regarding those projects which were not high on the published priority list.

Question: The BIA/Office of Construction Management (OCM) received $7.5 million for the construction of juvenile detention facilities under the authority of Public Law 99-570 in FY 1987. Please provide a report on how these funds have been utilized. In your report list the projects which have been constructed or are being scheduled for construction with these funds. For each completed project indicate the estimated project cost at the pre-construction phase and the final project completion of the project. If any project is still in construction, please indicate the scheduled date of completion.

Answer: The PONI study has been completed for the top ranked project, the Eagle Butte Juvenile Detention Center. The design and construction of this facility, intended to serve as a model for future centers, is underway this fiscal year. Funding for the juvenile detention portion is estimated to be approximately $500,000. A PONI study for the Fort Peck Youth Shelter was completed and a contractor has been selected. PONI studies are underway for the top ten ranked projects during this fiscal year.

Question: I note that the Budget request and justification does not address the construction funding needs of adult detention facilities. How does the BIA/OCM respond to tribal requests for construction funds for new or replacement adult detention facilities? How does the BIA decide which requests should get priority attention?

Answer: A ranking process for PONI studies leading to construction or renovation of adult detention centers in Indian country was initiated in FY 1988 with a ranking being published in the Federal Register on June 7, 1989 (Attachment I). The first five of these projects are to be contracted for PONI studies. Based upon the results of these studies, decisions will be made on future construction requests.

ATTACHMENT I

[From the Federal Register, June 7, 1989]

Bureau of Indian Affairs

Ranking of Applicants for Planning of New Institutes

ACTION: Notice of ranking.

SUMMARY: This notice is published to inform all Tribal applicants of the ranking for Planning of New Institutions (PONI) requests for construction and/or renovations of detention facilities in Indian country. The notice requesting applications was published in the Federal Register on December 9, 1988 (Vol. 53, No. 237, page 49796).

Thirty-seven (37) applications were received, four of which were not graded since they were postmarked after the established deadline of February 13, 1989.

Two other applications were not graded because they had already completed PONI programs. These two applications will be maintained at the Division of Law Enforcement Services Office until the 1989 PONI programs have been completed. Following that they will be in competitive status with the other applicants for the 1989 construction/renovation selection. Thirty-one applicants were received and evaluated by a five member committee with representation from Bureau of Indian Affairs, Division of Law Enforcement Services, Division of Drug, Alcohol and Substance Abuse, and the Branch of Judicial Services.

The thirty-one applications were scored by each of the five committee members based upon established criteria and point values. The individual criteria scores were then accumulated, totaled and averaged. The results of this evaluation process are as follows:

Ranking and Applicant's Name

1. Sac and Fox Nation of Oklahoma
2. Ute Mountain Ute Tribe
3. Gila River Indian Community
4. Salt River Pima/Maricopa Indian Community
5. Colville Confederated Tribes
6. Confederated Tribes of the Umatilla Indians
7. Eight Northern Pueblos
8. San Carlos Apache Tribe
9. Three Affiliated Tribes of Fort Berthold
10. Mississippi Band of Choctaw Indians
11. Blackfeet Nation
12. Mescalero Apache Tribe
13. Spokane Tribe of Indians
14. Pascua Yaqui Tribe
15. Native Village of Kotzebue
16. Mille Lacs Band of Chippewa Indians
17. Lower Brule Sioux Tribe
18. Fort Mojave Tribe
19. Oglala Sioux Tribe
20. Navajo Nation—Shiprock
21. Shoshone and Arapaho Tribes
22. Colorado River Indian Tribes
23. Devil's Lake Sioux Tribe
24. Navajo Nation—Crownpoint
25. Navajo Nation—Chinle
26. Confederated Salish and Kootenai Tribes
27. Navajo Nation—Fort Defiance
28. Fort Belknap Agency
29. Cocopah Indian Tribe
30. Navajo Nation—Tuba City
31. Reno Sparks Indian Colony

FOR FURTHER INFORMATION CONTACT: Mr. Warren LeBeau, Staff Assistant Detention, Division of Law Enforcement Services, Marana, Arizona, (602) 629-6406 or Mr. Robert Montoya, Facility Management and Construction Center, (505) 766-2846.

W.P. Ragsdale,

Assistant Secretary—Indian Affairs.

[FR Doc. 89-13413 Filed 6-6-89; 8:45 am]

BILLING CODE 4310-02-M

Question: Is there a current priority list for adult facilities which BIA/OCM can use to allocate construction funds? If yes, please provide me a copy.

Answer: There is not currently a priority list for adult detention construction. A final ranking will be determined after the completion of the above mentioned PONI studies.

Construction - Highway Trust Fund

Question: I understand that a new formula for distributing the Highway Trust funds has been under consideration in the past year. In fact, a May, 1989 Relative Need Study of the Road Construction Funds determined that the Navajo Nation should receive 33 percent of the trust funds available for road construction on Indian reservations. In view of this, why is the budget justification proposing to transfer $7.5 million out of the Navajo allocation of the Highway Trust Fund to the Secretary for road construction needs on the New Lands instead of requesting additional funds to address the New Lands needs?

Answer: A new formula for distributing Highway Trust Funds will be announced in the Federal Register. After public comment, a final decision will be made. The proposed public roads on the New Lands area are eligible to receive funds under the normal fund distribution formula for Indian Reservation Roads using Highway Trust Funds. The $7.2 million for the New Lands would be a part of the normal Navajo allocation of Highway Trust Funds and is not proposed for transfer to another account, but will be expended in the Highway Trust Fund appropriation. No additional funds for the New Lands roads were requested in the budget request for FY 1991 due to consideration of other programs of a higher priority. However, the Bureau anticipates a large increase in contract authority in the Highway Trust Fund beginning in FY 1992, which should provide additional funding for the continuation of the road construction on the New Lands.

Navajo Rehabilitation Trust Fund

Question: Before use of the funds appropriated to the Navajo Rehabilitation Trust Fund can begin, a conceptual framework must be submitted by the Secretary on behalf of the Navajo Tribe. I know that the Navajo Tribe submitted its proposed framework in December, 1989. What is the status of the Secretary's review of the tribal proposal and when can we expect the Secretary to submit the framework to Congress?

Answer: A planning meeting between the Secretary's Office, the Bureau, the Office of the Navajo-Hopi Relocation Commission, and members of the Navajo Tribe was held on February 7, 1990. As a result of this meeting, the Navajo Tribe and the Navajo Area prepared and submitted a draft framework. This draft has been reviewed and was submitted to the Navajo Tribe for their review comments during the week of April 2, 1990. The Bureau anticipates the final document will be submitted to Congress in May 1990.

Question: What measures is the Secretary taking to assure that the Navajo Tribal efforts to assist relocatee families living on the New Lands and other parts of the Reservation are not adversely affected by the Secretary's failure to submit the framework in a timely manner?

Answer: We do not foresee the delay creating any serious problems for the Navajo Tribe in addressing relocatee needs. The Office of the Navajo-Hopi Relocation Commission, Bureau staff, and IHS are available to provide short-term assistance to the Navajo Tribe in providing services to the relocatees. Most of the FY 1990 funding will be used to address long-term planning efforts primarily in the area of community impact, infrastructure, training, economic development and housing. In cases of housing repair delays, the Office of the Navajo-Hopi Relocation Commission is prepared to provide temporary emergency housing for the relocatees.

Question: I am particularly concerned about the problems which any delay in submitting the framework may have on the ability of the Tribe to respond to the pressing needs of the relocatees with the $800,000 which was appropriated in FY 1990. Finally, why didn't the secretary request any funds for this Trust Fund for FY 1991?

Answer: Funds were not requested for the Trust Fund in FY 1991 due to timing of the preparation and submission of the conceptual framework for Congressional approval. However, upon approval of the conceptual framework, the Bureau and the Navajo Tribe will prepare and approve an annual program and budget request for FY 1992. Under the Operation of Indian Programs account, the $1,004,000 appropriated specifically for the Navajo-Hopi Relocation program are also used to meet the needs of the relocatees.

Navajo Community College

Question: Mr. Secretary, as you know, Northern Arizona University has recently signed partnership agreements with the Hopi Tribe of Arizona and with the Navajo Community College and is pursuing additional agreements with other tribes to more directly utilize university resources to help achieve Native American self-determination goals in both education and economic development. What do you see as the possible benefits to the involved tribes? It has been reported that these partnership agreements could attract significant funding resources from private foundations and businesses. Could you comment?

Answer: The Bureau supports the concept of a partnership between the Hopi Tribe and Northern Arizona University. Any resources exchanged between the two organizations is not directly related to the Bureau's responsibilities for funding. The universities in Arizona have provided tribes with technical assistance and training and if as an added benefit foundations and businesses would wish to invest in these agreements, the Bureau encourages the tribes to accept such investments as part of the economic investment which would also add resources to the university.

Question: Is there a possible partnership role for the BIA in helping to facilitate and support these partnership agreements?

Answer: The Bureau has no direct role in establishing the partnership, but encourages the tribes and universities to enter into cooperative agreements. The Bureau does have some expertise in contracting which could be offered to the tribes as technical assistance, if they are entering into a contract as part of the partnership.

Question: What means does the BIA have to financially assist the planning and administration of these agreements in FY 1990 and FY 1991?

Answer: There are no financial resources for the planning and administration of the agreements, but the Bureau can provide technical assistance.

Question: What role could be developed in the future? Could cooperative agreements be developed with the agency, the tribes and the university?

Answer: Tribes may always enter into agreements with nearby colleges and universities which have resources and access to programs which could help tribes develop programs to improve their educational and economic futures.

Question: It has been suggested that regional cultural resource centers could be created at NAU and other qualified universities to help advance the protection as well as the marketing of American Indian arts and crafts, document cultural history, assist in the recording and teaching of Native American languages, and provide other educational and economic services. What benefits could you see in this approach?

Answer: The teaching of cultural history and languages in conjunction with tribal experts could definitely assist in the Native American's attempt to discover much about their history. The storage and categorizing of such information by the university would be valuable to the history of the Indian tribes. A program that would assist in the marketing of native arts and crafts would support the economic life of these tribes.

Question: What steps could the agency take, perhaps through the Indian Arts & Crafts Board or through the Assistant Secretary's office, to designate a regional cultural resource center?

Answer: The Bureau does not have the resources to establish a regional cultural resource center; however, it would encourage tribes to undertake this project. The Bureau would assist in the consultation with other tribes and oversee the process to see that all tribes' needs are considered in the establishment of such a center.

Navajo Indian Irrigation Project

Question: Over the past few years, both Department of Interior and Bureau of Indian Affairs' officials have acknowledged in Congressional testimony that there is no question that there is a legal right entitling the Navajo Nation to a completed Navajo Indian Irrigation Project (NIIP). Despite those statements, neither the Department or the Bureau has ever requested that funds for NIIP construction be included in the President's budget. How does the Bureau explain that?

Answer: The Inspector General conducted an audit of NIIP and recommended the BIA perform an economic analysis, including compensation for the blocks that have not been completed, to justify continued construction. A contract has been awarded to conduct the cost-benefit analysis.

Question: Does the BIA or the Department now question that the federal government is legally and morally obligated to complete NIIP?

Answer: The Bureau disagreed with the Inspector General's findings and recommendations. In the resolution of the disagreement, the Bureau agreed to perform the economic analysis to justify continued construction.

Question: In previous years' testimony, the Department's acknowledgement of the legal obligation of the federal government to construct NIIP included the recognition that this commitment was contingent neither upon the cost to the federal government nor upon the Navajo Nation earning a profit from agribusiness enterprises on the lands irrigated by NIIP. Yet, I understand that the Department is seeking an "outside cost-benefit analysis". What exactly is the nature of this analysis?

Answer: The economic analysis is a conventional cost-benefit analysis of a completed project of 110,000 acres of irrigation land.

Question: Why is such a cost-benefit analysis necessary?

Answer: The analysis is being prepared to resolve the differences between the Bureau and the Inspector General with regard to the audit findings and recommendations.

Question: When is this analysis scheduled to be completed?

Answer: The contractor is to provide a draft report to Bureau managers by May 1, 1990. The report is to be presented to the Bureau in final form by June 1, 1990.

Question: In the event that the results of this analysis shows that the costs outweigh the benefits for the federal government, would the Department contend that this would somehow rescind the statutory obligations of the federal government to the Navajo Nation to construct NIIP?

Answer: Based on preliminary analyses by the Bureau, we anticipate the cost-benefit ratio will be very close. Also, the estimated compensatory costs for not completing NIIP are substantial. If the ratio is indeed close, and the estimated compensatory costs are considered, the Department will more than likely support completion of the project.

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

General Budget

Question: Your budget for FY 1990 is much better than in previous years. In FY 1990, for instance, the BIA proposed a 4 percent decrease from the FY 1989 enacted level. The proposed level for FY 1991 is essentially the same as the FY 1990 enacted level. Is there any particular reason why this budget is better than in previous years?

Answer: The President advocates a government-wide effort to improve the services provided to the American Indians. Both Secretary Lujan and the Assistant Secretary for Indian Affairs support this effort. The FY 1991 Budget Justifications were written to support better services for Indian people throughout the country.

Indian School Equalization Program (ISEP)

Question: In FY 1990, the Bureau began a three year process to adjust teacher salaries up to the rates paid by the Department of Defense, as required by P.L. 100-297 -- the Education Amendments of 1988.

The FY 1991 budget requests a dollar increase of 4 percent for the Indian School Equalization Program (ISEP), but a 1 percent reduction in the number of FTE's for FY 1991. In addition, the FY 1991 budget indicates that the Bureau intends to initiate several new programs in FY 1991. Does the FY 1991 budget maintain the effort of matching the salaries paid by the DOD?

Answer: The FTE reflect only the programs or schools actually operated by the Bureau. The Bureau is phasing-in the increased teacher salaries toward the goal of matching the DOD pay scale, and the FY 1991 budget includes funding for the second phase.

Question: If so, how can this be accomplished with less people?

Answer: The reduced FTE reflect an increase in contracting for Education programs.

Question: Does the funding provided in FY 1990 and requested in FY 1991 include salaries and benefits, or just the salary requirements?

Answer: The funding provided in FY 1990 and FY 1991 for the teacher pay raise includes only the salary requirements. In estimating the cost of the teacher pay raise the Bureau did not calculate the increased cost of employee benefits which is now estimated to be $2.8 million. This omission will be corrected in FY 1992.

The FY 1992 budget will include the third and final phase. The calculations of this cost did not include a provision for benefits, and this omission will be corrected in 1992. The Bureau is presently analyzing the payroll and benefits costs to determine actual costs incurred.

Question: How does the Bureau's teacher turnover rate of 30 percent compare with DOD's turnover rate?

Answer: The Bureau does not have data on the DOD turnover rate and there fore, is unable to make the comparison.

Question: What percentage of teachers leave BIA schools and go to DOD schools?

Answer: The Bureau does not track the personnel who leave the Bureau to see where they go after leaving the Bureau.

Question: In FY 1988, the Bureau adopted the Effective Schools Movement which has had significant success in public schools. The program is aimed at the process in the school, such as teacher training and school management.

Nineteen schools were selected to participate in the pilot phase of the program. Thirty principals and line officers received commitment training.

You are proposing not to retain the $500,000 Congressional add-on for this program in FY 1991. Instead, the originally selected effective schools will undergo an intensive evaluation of the model.

In addition, you have requested an additional $500,000 in FY 1991 to implement a two week training institute for educators and administrators of BIA schools (p. 38). Why do you feel a two week training institute will be more beneficial than ongoing training program? If so, how will the new program differ?

Answer: The FY 1991 budget continues the $500,000 for the Effective Schools Program and the Bureau will continue to implement this program. In FY 1991, the Bureau is requesting an additional $500,000 for training new administrators as well as re-training current teachers and counselors. Both programs are effective and the Bureau doesn't place more importance on one than the other. The two programs are different in concept but will accomplish the same goal of raising the achievement level of students.

Question: Is there an ongoing training program? If so, how will the new program differ?

Answer: The Bureau currently conducts training for its staff in the Chapter 1, Special Education, Effective Schools, and Math and Science Programs. There is no on-going training program for administrators, i.e., line officers and their staffs.

Currently, the Bureau has an on-going program to train a limited number of teachers in math and science. These funds will enable the Bureau to train all teachers and administrators and to expand the training beyond math and science. Recent research indicates a need for different training to address the learning styles of Indian students. The training will include training in the whole language approach to teaching language and reading.

Question: What will the costs be of the program once it is implemented?

Answer: The Bureau anticipates that the training will be completed through a variety of methods using existing Bureau personnel, contractors from colleges and universities and staff from the Tribally Controlled Community Colleges. The cost each year is estimated at $500,000.

Question: The FY 1990 appropriation adjusted for the Gramm-Rudman sequestration for the Indian School Equalization Program (ISEP) is $170 million.

FY 1991 base budget for the ISEP program is $189 million (p. 28). Can you provide some detail for the record and to the Committee for this base adjustment? Does the FY 1991 base level include the funding for the student transportation program?

Answer: As shown on page BIA - 24 of the Budget Justifications, student transportation was transferred to the ISEP formula and is included in the FY 1991 base. The base also includes increases for federal and 638 pay raises and the costs of the Federal Employees Retirement System (FERS).

Question: The FY 1991 budget proposes an additional $625,000 to allow Bureau-funded junior high schools and senior high schools which have departmentalized and developed a curriculum of major disciplines to apply for purchases for a variety of classes. How many junior high schools would qualify for funding? Senior high schools?

Answer: There are 24 junior and senior high schools that qualify for funding for the equipment purchase. The Bureau anticipates that not all of the schools will need to apply for the funding. Senior high schools may apply on a matching basis for replacement, since they already have some equipment at the schools.

Question: Does the program include an effort to help schools qualify?

Answer: Schools will be encouraged to apply for equipment funds if they do not meet the equipment standard. They still must provide matching funds from their ISEP allocation.

Question: The Bureau has proposed a new "Parents as Teachers" (PAT) program for FY 1991. The program will emphasize early childhood education from birth to 5 years old. Funds will be used to provide training and curriculum materials for parent educators, ancillary personnel, instructors, and support staff. The program is designed to help parents teach their children during different stages of the child's development (p. 39) An additional $2.0 million has been requested for FY 1991 to initiate this program with schools applying for participation and selection made by the BIA. How has this program been tested?

Answer: From 1981 - 1985, approximately 350 families in four Missouri school districts took part in the pilot phase of Parents as Teachers (PAT). The program has expanded gradually each year with 30% of eligible families participating in 1988-89. When children in the pilot project reached age 3 (PAT serves children from 0-3), a randomly selected group was tested against a carefully matched comparison group. Results of this evaluation, conducted by an independent research firm, confirmed the benefits of PAT. At age 3, children in the pilot project were:

- significantly more advanced than other children in language development;
- significantly ahead in problem solving and other intellectual abilities; and
- significantly advanced in demonstrating coping skills and positive relationships with adults.

The evaluation also showed that both parents and children received benefits from the program, regardless of socioeconomic status and traditional risk factors.

Research is now being conducted with a larger group of parents and children throughout the state to provide additional data about the effectiveness of PAT.

Question: How many schools do you think will qualify?

Answer: The Bureau plans to have ten schools participate in the PAT and PACE programs. This is a two year pilot effort and its applicability and success with Indian children will be evaluated at the end of FY 1992.

Question: With $2.0 million, what is the efficient number of schools that should participate?

Answer: The Bureau has determined that ten schools will be an efficient number of schools to evaluate the pilot programs. The target group for the PAT program will be children from ages 0-3 and their parents. The target group for the PACE program will be children from ages 3-4 and their parents. It is anticipated that approximately 100 children will be served per school with an approximate cost of $2,000 per child. This includes training and evaluation costs.

Question: Will the schools determine which children will be allowed to participate?

Answer: The Bureau has determined that at participating schools, children from the ages of 0 - 3 and their parents will be allowed to participate in the Parents as Teachers (PAT) program or ages 3 - 5 in the PACE program.

Substance Abuse

Question: Why do you feel counselors are necessary if they are not required, cannot be hired, and don't exist at a similar level in non-BIA schools?

Answer: Given the at-risk students served by Bureau-funded schools, the Bureau believes that we must continue to attempt to recruit or train existing staff to provide them with the skills necessary to assist in the prevention of substance abuse. Indian Health Service statistics show 121,623 children with mothers under the age of 20 years and 451 children with mothers under the age of

15. These teenage mothers must be educated about Fetal Alcohol Syndrome. Alcohol death rates for American Indians and Alaska Natives is 24.6% for 1986, over 3.8 times the rate for the United States, all races.

Southwestern Indian Polytechnic Institute

Question: The Southwestern Indian Polytechnic Institute is located in Albuquerque, New Mexico and opened in September of 1971 to provide Indian students with post-secondary educational programs in vocational and technical fields that are in high demand.

The FY 1990 justification indicates that SIPI had a placement rate for graduates of over 80 percent. The FY 1991 justification, however, indicates that this rate has dropped to 74 percent (p. 50). Is this a normal fluctuation, or is there a problem with the program?

Answer: The shift in the placement rate from 80% in FY 1990 to a rate of 74% in FY 1991 is based upon the following three factors:

1) More students opted to pursue higher education rather than seek direct employment.

2) Some students did not seek direct employment upon graduation.

3) Some students who completed and received a certificate opted to return to SIPI and gain a certificate in the newly established Entrepreneurship program.

This shift (7.5%) is viewed as a normal fluctuation and in no way represents a problem with the program.

Post-Secondary Schools

Question: In FY 1990, $500,000 was added for Haskell Indian Junior College and Southwestern Indian Polytechnic Institute for one-time projects such as equipment purchases, development costs for new programs and investigation of interest in summer school. The BIA has proposed not to continue funding for these one-time costs, but has proposed an additional $150,000 for each institution to continue operation of the Natural Resources curriculums (p. 51). Why does the Bureau put such a high priority on the Natural Resources curriculum over other curriculums?

Answer: Haskell and SIPI have placed a high priority on developing and implementing a Natural Resources Technology program based upon a series of surveys administered to Native American tribal officials. Tribes indicated a need for qualified specialists in the area of natural resources management. The Intertribal Agriculture Council, testifying before the House Appropriations Subcommittee on Interior and Related Agencies, on March 3, 1988, identified natural resources management as creating "new wealth from renewable resources," and noted a drastic need to train and educate American Indians and Alaskan Natives in the protection, conservation, development, and use of their agricultural and other natural resources." According to a 1989 report by the Society of American Foresters, Native Americans comprise only one-half of one percent of students enrolled in professional level forestry and natural resources programs. Specifically, of 14,136 students, 71 are Native American. In the Bureau alone, which has trust responsibilities for 99 forested reservations, there were 57 professional forestry positions unfilled as of December 1989. In May 1989, only 58 of the Bureau's 277 foresters were Native Americans. In addition, the Bureau projects the retirement of 49% of their natural resources professionals before the end of 1992. Within the Forest Service, Native Americans represent less than 2% of the professional natural resources workforce (1989 data). A natural resources program such as Haskell's and SIPI's, which are the only intertribal programs serving more than 100 tribes, can significantly change these statistics. The colleges understand the high-risk nature of Indian college students (85 of every 100 who begin in a majority culture institution drop out before the end of their freshmen year) and have designed programs which recruit and retain Native Americans majoring in natural resources. Funding for these programs is imperative if true diversity in the government workforce as a whole is to occur, and if Native Americans are to be truly responsible for their own lands.

Question: Is the hiring rate better than other industries?

Answer: Hiring in the field of natural resources is superior to other industries due to a drastic need from federal agencies, including the Bureau of Land Management, Forest Service, Soil Conservation Service, National Park Service, and the Bureau of Indian Affairs.

Question: What is the base program for FY 1991 for the Natural Resources curriculum at these institutions?

Answer: Haskell and SIPI provided the following estimates for the cost of the Natural Resources program for FY 1991.

	Haskell	SIPI
Staff Salaries........................	$112,060	$89,000
Travel - students to and from fieldwork sites, supervision of students, staff travel to recruit...	7,000	39,000
Equipment............................	15,000	60,000
Textbooks, materials, and supplies.....	26,000	8,000
Placement............................	10,000	5,000
	$170,000	$211,000

The cost for room and board of students is already included in the budget of the school.

Question: Do the summer positions lead to permanent positions with the Forest Service or other Federal agencies?

Answer: Yes they lead to Cooperative Manpower and Job Training Agreements between SIPI, Haskell, and the USDA Forest Service, and identify the following employment possibilities for SIPI students:

1) funded cooperative employment positions will be established for 16 weeks during the summer months for qualified students, following completion of the first year of instruction; and

2) a series of specifically funded seasonal employment positions will be established for all qualified students.

Navajo Community College

Question: It is my understanding that the BIA is turning over a facility in Shiprock, N.M. to the Navajo Community College. According to the tribe, current law states that if BIA turns a facility over to another government agency, it must be brought up to code prior to completion of the transfer. In addition, the tribe indicates that current law does not apply if BIA turns it over to the tribe and the tribe says that the facility won't meet the building codes. Could you provide the Committee and the record a brief analysis of the law as well as the situation in Shiprock.

Answer: As a result of the Navajo program review conducted last year, it was determined that the Navajo Community College was using building # 1228 at the Shiprock Agency. This building has been determined to be in excess of the Bureau's needs, no longer required by the Shiprock Agency, and has been included as part of the excess space reduction program. As stated in 43 BIAM Supplement 2, Bureau policy is to transfer excess buildings in current condition. The Bureau is not aware of any law which requires that excess buildings be brought up to code prior to transfer. The Navajo Tribe has been provided a copy of the backlog of facility requirements on this building.

Special Higher Education Scholarships

Question: The FY 1991 budget justification on page 52 states: "Law is a priority item in the Special Higher Education program and represents over 30 percent of total scholarships awarded. Therefore, the Bureau did not continue the FY 1990 Congressional add-on of $160,000 for the summer law programs." An additional decrease for FY 1991 in the Special Higher Education Scholarship program calls for a further decrease of $200,000 to reflect the Bureau's decision to fund only students who are studying in priority fields. I am not sure how those two decreases relate to one another. Can you explain?

Answer: The two programs are separate and the decreases are not related. The Bureau continued $300,000 of the FY 1990 Congressional add-on for Special Higher Education Scholarships, but did not continue the Congressional add-on for the Summer Law Program.

Question: If the law program is a priority item, why are you proposing a decrease?

Answer: Law is one of the priority fields within the Special Higher Education Scholarship Program. Funding for the Indian Summer Law Program which is not requested in 1991 is for a prep course for students already accepted into law school. It was possible for a student to be funded for the Summer Law Program as well as receive a scholarship.

Question: What is a priority area?

Answer: The priority fields established by tribal input are education, engineering, natural resources, social work, law, and medicine.

Welfare Assistance Grants

Question: The Bureau of Indian Affairs provides General Assistance payments to eligible Indians when such assistance is not available through the state or local public agencies (p. 75). In the FY 1990 budget, the BIA estimated that level for FY 1989 was 48,875, a difference of 27 percent. Reviewing some of the other caseload data between the estimate and the actuals, similar differences exist. Yet the estimated grant costs are fairly close to the actuals. Why is it so difficult to estimate the caseload, but not the grants costs?

Answer: The caseload data is submitted by the agencies and consolidated by Central Office staff. Among the many variables which affect caseload are weather, fire season severity, and overall economic situation.

Question: You have requested an additional $700,000 in FY 1991 to support growing general assistance programs in the states of Washington and Oregon. According to the budget, you indicate that the FY 1990 data in these two states should provide a more accurate basis for future budget estimates (p. 78). What is in the FY 1991 base for Washington and Oregon?

Answer: The General Assistance budget is not developed on the basis of individual areas. Prior year experience is analyzed by category and the estimates are built on a Bureau-wide basis.

Question: What type of analysis have you performed to determine that $700,000 is adequate to address the need?

Answer: The Bureau is currently conducting an analysis of the projected expenditures in the states of Oregon and Washington in response to an FY 1990 Congressional Directive. The preliminary data shows a growing number of applicants, but eligibility has not been determined in all cases. We are collecting monthly caseload data.

Question: Are there growing general assistance programs in other states that aren't addressed in this budget?

Answer: Based on the Bureau's analysis of the general assistance program, at this time, programs in other states are not showing or projecting a rapid increase in expenditures.

Employment Assistance Readiness Net (EARN)

Question: The Employment Assistance Readiness Net (EARN) was established in FY 1988 as a three-year community-based demonstration project, designed to enable Indian individuals who receive general assistance to achieve sustained and meaningful work and to develop skills. A reduction of $2.0 million is proposed for FY 1991 in order to review and evaluate the program. Can you elaborate on the success of the program through FY 1989?

Answer: We are unable at this time to elaborate on the success of the EARN Demonstration Projects. The projects were set up with three year goals and objectives. As of this time, each of the projects is functioning at the levels established in the scope of work. The Earn evaluator will be submitting his report by July 1, 1990, and it will be provided to the Committee.

Law Enforcement

Question: The Special Investigations Unit (SIU) of the Central Office's Division of Law Enforcement Services began operations in FY 1988. The purpose of this unit is to address the specific problems of drug and child abuse in Indian country (p. 82). Since 1988, the SIU has received 120 child abuse referrals which resulted in the opening of 42 cases, some involving multiple victims.

Seven of these cases have been closed with arrests and convictions, and the remaining cases are still open.

For FY 1991, you have requested an additional $241,000 (+15 percent) in the law enforcement program to hire, train, and equip four additional investigators.

Where are the current investigators located and where will the additional investigators be located?

Answer: All current and newly hired investigators will be stationed in Albuquerque, New Mexico, which is the headquarters location of the Special Investigations Unit. The SIU operates as a team, responding to requests for assistance from field offices throughout Indian country. Having the officers located at a central location allows them to respond more quickly to these requests.

Question: How many of the remaining cases have arrests and await trials?

Answer: The caseload for the Child Abuse Section of the SIU, has increased from 42 in 1988 to 113 in 1989. These included 74 child sexual abuse cases, 37 physical abuse cases, and 2 emotional abuse cases.

The Narcotics Section opened 34 cases in 1989, of which approximately ten have been closed through arrest, prosecution, or referral to another agency. The Unit interacts with federal, state, local, and tribal law enforcement agencies involved in drug interdiction in Indian country.

Prairie Dog Control

Question: A new five year plan for the prairie dog control program has been developed in cooperation with the Aberdeen and Billings Area offices for fiscal years 1990 through 1994. This five year program will cover two reservations in the Aberdeen Area and two in the Billings Area. The total number of acres infested with prairie dogs on those reservations is 120,000 (p. 138). The total cost of the treatment over the five year period is expected to be $4.0 million. The FY 1990 phase for this program is the preparation phase which involves carrying out a reconnaissance survey of infested areas, mapping prairie dog towns determining the priority areas as well as a consultation with the Fish and Wildlife Service to assure the protection of the ferret habitat as an endangered species. Now that you are halfway through the preparation phase, have you run into any unanticipated problems?

Answer: The Bureau's field offices report no unanticipated problems that may affect the on-going preparation phase.

Question: Can you break down the cost of this program by phase?

Answer:	Mop-up operations - Pine Ridge (FY 1990)	$ 100,000
	Preparation phase (FY 1990)	$ 400,000
	Consolidation phase (FY 1993)	$ 500,000
	Maintenance phase (FY 1994)	$ 1,000,000

Question: What is the cost associated with compliance with the Endangered Species Act?

Answer: Based on the Fish and Wildlife Service's survey guidelines and field experience with similar surveys on the Pine Ridge Reservation, the average cost per acre is approximately $25 depending on the size of prairie dog towns and the density of prairie dogs in each town.

Noxious Weeds

Question: You have requested an additional $1,270,000 in FY 1991 (+173 percent) to launch the five-year Noxious Weeds Management Plan. The objective of this plan is to control and manage 50 percent of the identified weeds within fiscal years 1991 and 1992 with a total treatment of approximately 120,000 acres. A total of 750,000 acres is targeted for control during the five year plan (p. 144). The budget indicates that a noxious weed meeting of tribal and BIA weed coordinators will be held in early FY 1990 to establish the top priority of areas to be controlled in FY 1991. Has this meeting been held?

Answer: This noxious weed meeting was held during the annual meeting of the Society for Range Management on February 14, 1990.

Question: What areas were identified as top priorities at that meeting?

Answer: Top priority areas were identified during a field survey of selected reservations in the summer of 1989 and were confirmed in the February 1990 meeting. The top priorities are as follows:

Area Office	Reservations	Target Control Acres
Aberdeen	Sisseton, Fort Berthold, Turtle Mountain, Rosebud Pine Ridge, Yankton, Fort Totten, Standing Rock, Winnebago, Crow Creek	80,000
Billings	Crow, Blackfeet, Wind River, Northern Cheyenne, Fort Belknap, Fort Peck, Rocky Boy's	100,000
Albuquerque	Southern Ute, Zuni, Mescalero, Jicarrila, Southern Pueblo, Ramah Navajo, Northern Pueblo, Ute Mountain Ute	70,000
Anadarko	Anadarko, Concho, Horton,	
Eastern	Seminole, Miccosukee	3,000
Minneapolis	Great Lakes Agency tribes	5,000
Muskogee	Osage, Okmulgee, Miami, Tahlequah, Ardmore, Choctaw	25,000
Navajo	Navajo Irrigation Project, Shiprock, Fort Defiance, Chinle	75,000

Portland	Flathead, Colville, Yakima, Nez Perce, Spokane, Warm Springs, Umatilla, Fort Hall	85,000
Phoenix	Uintah & Ouray	2,000

Question: What is the total cost to fund the five year plan?

Answer: The total cost is estimated to be $7.2 million.

Question: How can you have an objective to control and manage 50 percent of the weeds in FY 1991 and FY 1992, yet only treat 120,000 acres out of 750,000 you want to control?

Answer: The 750,000 acre figure is the goal for the five-year plan, of which 485,000 acres were identified as a priority (See chart on page BIA-140). Fifty percent of these priority acres would be 242,500 acres or 121,250 acres each for FY 1991 and FY 1992.

Question: Is this similar to efforts by other Federal land managers?

Answer: The objective of control and management of noxious weeds agreed to in the Federal Noxious Weed Control Coordination Workshop held in Billings, Montana in February 1989, is to launch an effective and realistic program in cooperation with the States Weed and Pest Control authorities with participation of county weed control agencies, Indian tribes, and private land owners and lessees. All federal land management agencies including the Bureau participated in and have taken the lead in this effort. The approach taken by the Bureau in weed control and management is somewhat different, taking into consideration the levels of infestation, diversity of weed species on each reservation, land ownership, land use, weed severity, and other local factors.

Question: Please provide to the Committee a copy of the study listing the most serious species from a control and economic loss standpoint.

Answer: The study will be sent to the Committee.

Forestry Program

Question: The BIA continues an initiative begun in FY 1977 eliminate the backlog of commercial forest acres requiring silviculture treatment and to bring them up to full productive capacity. The objective of this initiative is, through intensive forest development practices, to attempt to increase the allowable annual cuts (p. 149). The justification indicates that the number of acres treated will exceed 700,000, and the number of acres left to be treated will approach 300,000. How has the allowable annual cut changed over the years?

Answer: The calculated total annual allowable cut has decreased from 1,093.0 million board feet in FY 1977 to 1,009.8 million board feet in FY 1989. The primary reason for the decrease is restricted harvest activity on the lands as desired by the Tribal owners due to religious, cultural, or other constraints on the commercial forest land base. However, forest management activities have contributed to an increased measured annual growth on a per acre basis during this period. An example follows:

Stocking Plot Study Analysis
Comparison of Diameter And Board Foot Growth Per Acre
Flathead Reservation, Montana

	Average Annual Growth			
STUDY BLOCK	Tree Diameter	% Gain	Gross Vol/a	% Gain
Control (No management)	0.141"	0.0	234.4	0.0
Logging Only	0.192"	36.2	320.3	36.6
Optimum (Intensive management)	0.279"	197.9	360.6	53.8

Question: It is my understanding that up to 10 percent of the gross timber sale receipts are deposited in a special account at the agency level and are available for tribal forestry activities. These funds amount to $5 -$7 million annually. How have total receipts changed since the intensive forest management initiative began in FY 1977?

Answer: The 10% forest management deductions collected in FY 1977 were approximately $5,663,000. Forest management deductions collected in FY 1989 were approximately $7,332,600. This represents an increase of $1,669,600 in collections.

Question: In FY 1991, you have requested an increase of $2.0 million (+25 percent) for the Forest Development program (p. 153). This is a turnaround from the FY 1990 request which proposed a decrease of $3.0 million (-30 percent). The increase for FY 1991 is for the silviculture treatment program to address the remoteness of the remaining project sites. Why change the budgets for this program from FY 1990 to FY 1991?

Answer: The forest development backlog elimination program was initiated in FY 1977 by Congress with a special appropriation of $5,000,000. Since FY 1986, Congress has included annual increases of approximately $3,000,000 for this program. The Bureau decided to request $10 million for this program in FY 1991 as part of the increased emphasis on economic development initiatives.

Question: What is the timing of the completion of the project?

Answer: The (special) forest development backlog acres, identified in FY 1977, should be completed by the year 2001, at our current accomplishment rate and a constant funding level of $10.2 million annually.

Question: How are you maintaining the treated areas?

Answer: When the forest development backlog acres have received the prescribed treatment, they are eliminated from the backlog and are included as part of the general forest land base. If additional treatments are required for these lands they are funded within tribe/agency operations.

Water Management, Planning and Pre-Development

Question: You have proposed a decrease of $2.4 million (-25 percent) in the Rights Protection Implementation Program for FY 1991. Of this proposed reduction, the BIA expects that $1.5 million in tribal water operation costs will be met by direct funding from other federal agencies. For instance, tribal rural water system planning costs are proposed to be funded by the Bureau of Reclamation. Tribal water management grants are proposed to be funded through the Administration for Native Americans, while water quality management and planning grants are proposed be funded from the Environmental Protection Agency. How can you assure this Subcommittee that there is adequate funding in those agencies' budgets for these items?

Answer: We cannot provide assurance that funding from other federal agencies will occur at the Bureau's projected levels. However, based on the levels of direct funding provided by other federal agencies in FY 1990, it appears likely that the same levels of support will be provided to tribes in from EPA in its provision of more than $420,000 to tribes in the Minneapolis Area Office alone for water quality planning and protection grants. This figure serves as a strong indication of EPA's continuing effort to place such grant funds with tribes under funding from the Clean Water Act -- an effort which began in earnest in FY 1990 ~~with~~ resources totalling more than $1 million annually appropriated to accomplish the provisions set forth in the Act.

Question: What has been the reaction of the tribes to this proposal?

Answer: The Bureau has received no objection from tribes to receiving direct funding from other federal agencies in FY 1991. With respect to funding from EPA, the Bureau understands that recipient tribes are, in principle, encouraged by the actual distribution of Clean Water Act funding by EPA. However, those tribes regard the levels of funding to be low in comparison to the tribally-anticipated costs for surveying water quality conditions and planning for the protection or improvement of those conditions.

Question: How will this change in emphasis allow the BIA to refocus priorities?

Answer: The Bureau's priorities for Water Resources Management, Planning and Pre-Development will remain unchanged, i.e., support for threshold-level tribal old-water resources technical expertise, studies on present and future use of water resources, and planning for the development of water resources. With the advent of substantial EPA funding for water quality planning and protection, the Bureau expects to be able to provide higher levels of funding for priority work. The contributions from other federal agencies, while smaller, provide further support for this expectation.

Mineral Assessments

Question: The Mineral Assessments program began in FY 1975 and consists of work performed under interagency agreements with the Bureau of Mines and the Geological Survey where multiple tribes are involved, or by direct contracting with tribes (p. 171). The work is broken down into three phases:

Phase 1: a literature search to collect and compile data into a single document;

Phase 2: additional data is collected if favorable conditions for significant mineral development have been identified on a reservation;

Phase 3: sophisticated procedures are used to quantify the minerals, value the minerals, determine the economic viability of the minerals, and provide economic analysis and possibly provide operational and design recommendations.

Phase one studies have been completed for all reservations. If warranted, Phase II and III programs are performed on those reservations where tribes have requested additional information. Currently, 80 percent of the trust land base has had, or is currently undergoing, Phase II and III mineral assessments. Has the Bureau turned down any tribe's requests for Phase II and III studies due to budget constraints?

Answer: The Bureau receives more requests for mineral assessments than can be funded, therefore, the Bureau has established selection criteria to rank the requests submitted by the tribes to provide objective funding.

Question: What is the economic potential of the mineable resources?

Answer: The economic potential varies with the market, and that market appears to favor the development of precious metals, such as gold. Several tribes have promising gold anomalies, and the Bureau is attempting to obtain better information regarding the extent and value of the gold. The mineral industry for coal or base metal has taken an upturn with better market conditions and higher prices. There are large deposits of coal, copper, lead, zinc, molybdenum, etc., that may be developed and furnish significant income to Indian mineral owners. Oil and gas production on Indian lands is declining; but the Bureau in cooperation with tribes and the Geological Survey, has been actively pursuing the development of coalbed methane deposits on selected Indian reservations. The development of coalbed methane deposits may represent a new source of income for tribes.

Question: How are the BIA and/or the tribes following up on these studies?

Answer: When mineral studies are completed, tribes have the option of negotiating with companies in pursuit of a development contract. Several tribes have accomplished this. Others have waited until market conditions improve, or have initiated studies to assist them in the formulation of market strategies. The Bureau performs market studies for tribes upon request and provides assistance to tribes in formulating strategy approaches. Recently, one tribe sponsored a coalbed methane symposium in Denver, Colorado for the benefit of other tribes with the same mineral potential. In 1989, the Bureau co-sponsored a methane symposium which identified mineral potential in the State of Wyoming, and also sponsored an exhibition booth at the 28th International Geologic Congress in Washington, D.C.. While the Bureau does assist Indian tribes in mineral studies, it does not attempt to influence the tribe, nor does it act as an intermediary in seeking potential developers for the tribes' natural resources.

Hazardous Waste

Question: You have requested an additional $1.5 million in FY 1991 to initiate remedial cleanup and restoration of the Masonite Mill and/or the Kenwood dump sites (p. 194). The budget indicates that preliminary assessments conducted on these sites revealed the presence of chemicals. Feasibility studies are occurring in FY 1990, which could provide recommendations for treatment and remedial cleanup alternatives. Why are these BIA responsibilities?

Answer: These were identified as high risk sites by the Bureau's contractor. Under the Environmental Protection Agency (EPA), Hazardous Ranking System (HRS), and the National Contingency Plan (NCP), sites that do not score above 28.5 would not be EPA's responsibility for "Superfund" cleanup, as they are not listed on the EPA National Priority List (NPL). Thus, the pre-remedial and remedial activities required under the Comprehensive Environmental Response, Compensation and Liability Act, as amended, are the responsibility of the responsible agency which, in this case, appears to be the Bureau.

Question: Are they on BIA land?

Answer: These sites are located on allotted and Government-owned land. EPA has the cleanup responsibility on tribal lands.

Question: Why have they been rejected as superfund sites by EPA?

Answer: EPA has notified the Bureau that Section 300.68(a) of the National Contingency Plan (NCP) limits remedial actions financed by the Superfund to sites listed on the NPL and that Indian lands that do not qualify to be listed under the NPL rulemaking process would not be eligible for Superfund-financed remedial action.

Question: Who performed the preliminary assessments?

Answer: The preliminary assessments were performed under contract with Tetra Tech, Inc. located in Bellevue, Washington.

Question: Can you elaborate on the results?

Answer: Results of the Preliminary Assessments on twenty sites revealed that the Fort Howard Lagoon (Oneida reservation in Wisconsin) was eligible for NPL listing. The tribe, EPA, and the State of Wisconsin are currently collaborating on remedial investigations and possible remedial action. Four other high risk sites whose HRS scores were between 19.2 and 25.7 are judged to pose potential health and environmental risk that require possible remedial cleanup. Fifteen other sites were determined to pose no actual health or environmental risk and were dropped from further Superfund actions. The four high risk sites are:

Masonite Mill Creek Lumber Mill	Hoopa Valley, California
Kenwood Refuse Dumps	Cherokee, Oklahoma
Tulalip Landfill	Tulalip, Washington
Cooper Bluff Mine	Hoopa Valley, California

Question: What is the total anticipated cost of the treatment?

Answer: The anticipated cost for the four sites is estimated to be $3,000,000, or $750,000 each, based on EPA experience with small sites.

Question: How many other sites similar to this exist around the country?

Answer: Inventories in previous years by the EPA, IHS, and the Bureau revealed that there were approximately 80 other sites that have been under preliminary assessment. It is not known how many of these qualify as high risk and are eligible for Superfund-financed remedial action.

Question: You have requested an additional $1,050,000 for studies and mitigation work at the Midnite Mine on the Spokane Indian Reservation, Washington. The studies are proposed for groundwater sampling, testing and monitoring to determine the extent of any pollutants reaching the groundwater in the area and to determine the path which the contaminated area will follow (p. 194). The reclamation of the Midnite Mine was also proposed in a BIA reprogramming last year. The reprogramming proposal included acquiring the rights to, and maintaining, the Sherwood smelter -- also on the Spokane Indian Reservation. The facility would be used to process the mine waste which has accumulated at the Midnite Mine site. At that time, however, many expressed concern that proceeding in this fashion would eliminate any opportunity to recover costs from the Dawn Mining Company, the operator of the Midnite Mine site. The most recent correspondence I have from the Dawn Mining Company indicates that they continue to work toward a solution to the problem. Their current proposal is to treat the water on the site and dispose of the resultant sludge. Unfortunately, they have been unable to obtain permits for disposal. What is the current thinking on reclamation of the Midnite site?

Answer: The current thinking in the Bureau is to eliminate the water in the pits at the minesite. Until this is done, the mine is essentially paralyzed as there can be no reclamation or additional mining. A reclamation plan and an environmental impact statement will have to be prepared. The Bureau has provided $50,000 to the Bureau of Mines to conduct a study of the present water situation at the minesite. Along with recommendations for the disposal of the water, the Bureau of Mines will provide recommendations concerning the long-term reclamation of the minesite. It is hoped that these recommendations will provide guidance to the Bureau and BLM in developing reclamation plans and goals.

Question: Do you still feel it is the responsibility of the Bureau to move forward even if no funds are recovered from Dawn Mining Company?

Answer: Due to the potential for a serious pollution incident at the minesite, the Bureau feels it has the responsibility to move forward unilaterally. The water in the pits continues to increase and the amount of freeboard is beginning to reach a critical point. Pit #4 already has a level of water neither the Bureau nor Dawn Mining Company wishes to exceed. This has caused a series of seeps on the minesite which are a result of the hydraulic head that has been created. As more water mounts in Pit #3, Bureau staff will be watching for more seeps and the possibility of a major crack in the pit wall. The Bureau does not believe it can allow this to go on while awaiting the completion of all potential legal battles.

Question: What actions has the Bureau taken to assure that the Dawn Mining Company will pay for these reclamation costs?

Answer: The Bureau, along with the BLM, has issued orders requiring Dawn Mining Company to comply with their legal obligations under the mining leases and the requirements of Departmental mining regulations. Also, a Notice of Intent to Terminate the lease has been issued by the Bureau's Portland Area Director. Following this Notice, a hearing was held to listen to Dawn Mines' arguments against the termination. Presently, the Bureau awaits the Portland Area Director's decision on whether or not to terminate the lease.

Question: What type of work has the BIA done on the Sherwood site?

Answer: The Bureau has not done any work on the Sherwood site which is still under the control of Western Nuclear.

Question: If there was a problem there, would the BIA be responsible?

Answer: Since there is still a valid lease at the Sherwood Mine, any problem that may arise would be the responsibility of the lessee, Western Nuclear.

Question: The justification for FY 1991 indicates that testing is necessary "to determine the extent of any pollutants reaching the groundwater in the area and to determine the path the area contaminated will follow."

Although no studies were mentioned, the reprogramming letter from last June seemed to indicate that the amount of mine waters contaminated with radionuclides and acids were a health hazard. Has the Bureau determined that there truly is a health problem at the site, or is that the purpose of these funds?

Answer: Tests have shown that the water in the pits contains excessive amounts of numerous contaminants which would make it unhealthy for human consumption. The additional testing is to determine how far these polluted waters have traveled from the pit and minesite areas and to help map out the directions in which these pollutants are migrating. This is essential in mitigating any potential problems in the vicinity of the site and to lay the groundwork for reclamation plans at the area.

Question: The FY 1991 budget discusses the disposal of sludge generated from the treatment of the contaminated water at the Sherwood site. This appears to be similar to the Dawn Mine Company proposal except they have a different site and have had trouble obtaining the necessary permit to dispose of the sludge. How does the Bureau's disposal method differ from the disposal method of Dawn Mine?

Answer: The Bureau's present proposal is to build a Resource Conservation and Recovery Act Cell (RCRA) at the minesite to avoid off-site transportation of the sludge.

Question: Has the Bureau obtained all necessary permits to dispose of the sludge?

Answer: In checking with the Nuclear Regulatory Commission and the Environmental Protection Agency, there would be no permits required to build a RCRA cell and dispose of the sludge on-site. The Bureau believes this is one of the strong points of this solution.

Question: How much of the $1,050,000 requested in FY 1991 is for construction of the "cell"?

Answer: The estimated cost of the RCRA cell is between $750,000 and $1,000,000, including $200,000 for the cover. Funds not used for the construction of the cell would be used to conduct water tests and soil studies to determine future vegetation cover for reclamation.

Shoshone-Bannock Tribe

Question: An additional $300,000 was added in the Litigation Support program of the Shoshone-Bannock Tribe. These funds were provided to address imbalances in funding provided for the various tribes participating in U.S. vs. Oregon. The FY 1990 conference report states that future funding related to this litigation be made available equitably to all the parties involved. I note, however, that the FY 1991 justification simply states that "the majority of tribal needs for litigation support can be accomplished within the amount proposed for FY 1991 (p. 200)." Since the amount for FY 1991 does not include the add-on for the Sho-Bans, should I assume that the other tribes will be taking a reduction to accommodate the Sho-Bans?

Answer: Tribes in need of Litigation Support funding submit applications for the Bureau's review and evaluation. The Shoshone-Bannock's funding will be dependent upon their identified need, justification, and priority when compared to other tribal requests. Priority consideration is given to cases where tribes are in active litigation and/or negotiation, which is the case with the Shoshone-Bannocks.

Question: Who are the other tribes receiving funds in FY 1989?

Answer: The recipients of litigation support funds in FY 1989 were the following:

- Alaska Natives
- Arkansas Riverbed Authority
- Choctaw/Cherokee/Chickasaw Tribes
- Great Lakes Indian Fish and Wildlife Commission
- Gila River Indian Community
- Keewenaw Bay Indian Community
- Mescalero Tribe
- Northern Pueblos
- Omaha Tribe
- Quinault
- San Juan Southern Paiute
- SoBoba Band of Mission Indians (Department of Justice)
- Southern Ute Tribe
- Zuni (Department of Justice)

Question: For the past five years, please provide the amounts received by tribes from the litigation support program, separating the Congressional add-ons from the base budget.

Answer: See Attachment J.

ATTACHMENT J

The following is a listing of the tribes, tribal groups, and other entities receiving funds from the Litigation Support Program for the past five years.

($ in thousands)

	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989
Alaska Natives	250	250	300	388	188
Acoma and Laguna Pueblos	64	6	-	-	-
Acoma, Isleta, San Felipe, Santa Ana, Santo Domingo, Laguna, Jemez, Sandia, and Zia Pueblos	76	82	-	-	-
Arkansas Riverbed Activities	-	80	107	-	-
Arkansas Riverbed Authority	-	-	-	-	30
Blackfeet	-	753	-	-	-
Cayuga Nation of New York	30	40	-	-	-
Choctaw	-	-	150	-	-
Choctaw-Chickasaw-Cherokee Tribes	-	-	-	50	50
Colville	40	-	-	-	19
Crow	-	75	-	-	-
Dept. of Justice (Colorado River, Ft. Apache, Ft. Yuma)	-	-	75	-	-
Dept. of Justice (SoBoba Band of Mission Indians, Zuni)	-	-	-	-	16
Dept. of Justice (San Carlos and Gila River)	-	220	-	-	-
Dept. of Justice (United Nuclear and McClanahan cases)	-	-	-	132	-
Devils Lake Sioux	27	-	-	50	-
Fond du Lac Chippewa	-	23	-	-	-
Fort Belknap	-	31	-	-	-
Fort Berthold Three Affiliated Tribes	-	10	-	-	-
Fort Mohave	-	35	-	-	-
Gila River/Pima	-	-	14	-	-
Gila River Indian Community	-	-	-	-	40
Great Lakes Fish and Wildlife Commission	-	-	-	132	60
Jemez, Zia, and Santa Ana Pueblos	225	337	-	-	-
Jicarilla Apache and Ute Mountain Ute Tribes	127	3	-	-	-
Kalispel	206	25	-	-	-
Klamath	-	86	-	-	-

($ in thousands)

	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989
Lac Courte Oreilles Chippewa	81	-	30	-	-
Leech Lake Chippewa	-	16	-	-	-
Menominee and Forest County Chippewa	-	50	-	-	-
Mescalero Apache	247	380	-	-	8
Mille Lacs Chippewa	-	-	-	26	-
Mille Lacs, Grand Portage, Lac Courte Oreilles, Bad River Chippewa and Oneida of Wisconsin	-	103	-	-	-
Mohawk	10	-	-	10	-
Nambe, Pojoaque, San Ildefonso, and Tesuque Pueblos	89	9	-	-	-
Narangansett	-	-	-	15	-
Navajo and Hopi (Little Colorado River)	-	94	-	-	-
Northern Cheyenne	-	24	-	-	-
Northern Pueblos	-	-	-	-	40
Northwest Indian Fish Commission	-	66	-	-	-
Northwest Treaty Tribes Project	45	-	-	-	-
Keweenaw Bay Indian Community (Chippewa)	-	-	-	-	28
Omaha TRibe	20	-	-	-	125
Oneida of New York	-	-	-	15	-
Oneida of Wisconsin	-	-	-	56	-
Puyallup	201	-	77	400*	-
Pyramid Lake Paiute	-	-	52	-	-
Quinault	200	200	200	200	200
Red Lake Chippewa	50	15	-	-	-
Rosebud Sioux	-	80	-	-	-
San Carlos Apache	-	-	-	41	-
San Juan Pueblo and Jicarilla Apache	-	64	-	-	-
San Juan Southern Paiute	-	-	-	-	100
San Luis Rey (Pauma, Pala, Rincon, San Pasqual, Lajolla Bands)	25	90	2	-	-
Seneca of New York	-	-	-	35	-
Shoshone-Bannock/Nez Perce	-	48	-	-	-
Southern Ute	-	-	-	-	7
Southern Ute and Ute Mountain Ute Tribes	210	61	-	-	-
Spokane	197	132	-	165	100
Shoshone/Arapaho	-	50	-	-	-
Taos Pueblo	64	306	-	-	-
Warm Springs	77	-	-	-	-
Yakima	244	327	81	-	-
U.S. v. Canada Treaties and U.S. v. Washington State	25	-	-	-	-
Zuni Pueblo	829	122	-	-	-
Flathead	100	198	-	-	-
Great Lakes Chippewa	-	5	-	-	-
Grand Traverse Ottawa-Chippewa	9	-	-	-	-
Totals	3,768	4,496	1,088	1,715	1,011

* Congressional Add-on

Question: Please provide for the record the estimated distribution for the FY 1991 request by tribe.

Answer: The distribution of the FY 1991 Litigation Support funds will be determined based upon review and evaluation of the tribal applications. We anticipate the initial review of applications for FY 1991 funding will commence during the third quarter of FY 1990.

Question: How does the actual work performed by the Sho-Bans in litigation support in FY 1990 compare to the work done by the four Columbia River Basin tribes in the Rights Protection program (p. 163)?

Answer: Funds earmarked for Columbia River Fisheries Management on page 163 of the Bureau's FY 1991 budget request is for "hands-on" program management operations by the Columbia River Inter-Tribal Fish Commission and four member tribes. Resource management operations funded include regulation setting, conservation enforcement, harvest monitoring, fisheries stock assessment and enhancement, and in-stream flow management. These funds are not used for litigation support-related issues or for attorney's fees as is the case with the Shoshone-Bannock.

National Indian Gaming Commission

Question: In FY 1990, $50,000 was provided for travel expenses related to the Commission's work. You have requested $100,000 in FY 1991 for travel expenses. Can you elaborate on how you arrived at the $100,000 estimate?

Answer: In its first year, the Commission will be spending most of its time drafting regulations. Travel thus will be limited because no active regulation (which means inspections at gaming halls) will occur. However, once the Commission publishes its regulations, a great amount of time will be spent inspecting these halls for the first time. Our estimate assumes the following projected travel schedule of the Commissioner & staff for FY 1991 and that a one week trip will cost approximately $1,000:

Chairman of Commission and 2 auditors will make an average of 2 trips per month 3 persons X 2 trips X 12 months - 72 trips

The Associate Commissioners and General Counsel will make an average of 1 trip per month.
3 persons X 1 trip X 12 months - 36 trips
36 trips @ $1,000 each - $36,000
$72,000 + $36,000 - $108,000

Question: According to the provisions of the Act establishing the Commission, one of the purposes of the Commission is to set a schedule of fees to be paid to the Commission annually by each regulated Class II gaming activity. These fees will be used to offset the expenses of the Commission. What is the status of the fee schedule?

Answer: The fee schedule will be devised by the Commission when the regulations are drafted.

Question: How much has been collected to date in FY 1990?

Answer: No fees have been collected since the schedule has not been developed.

Answer: It is impossible to estimate collections at this time since the Commission has not been appointed.

QUESTIONS SUBMITTED BY SENATOR TED STEVENS

Alaska Spruce Bark Beetle Infestation

Question: Concerning BIA's management of over 10,000 native allotments in Alaska through BIA's natural resources development activity forestry program, does this year's budget provide funding for inventory of salvage spruce beetle timber?

Answer: No, however, Bureau staff have attempted to estimate the extent of the spruce bark beetle problem on native allotments in Alaska by utilizing available information and through cooperation with other federal agencies. There are approximately 536 allotments, totalling 58,604 acres, that may be affected by this epidemic. Of these lands, 14,000 acres are susceptible to the spruce bark beetle. Our estimates indicate that over 138.0 million board feet of timber could be killed by the beetles.

In regard to funding the necessary treatment we believe that the established route of land owner cooperation with the Department of Agriculture as lead federal agency for forest pest management is the most appropriate. The Bureau is active in this process, and will remain involved in the inter-agency task force currently addressing the Alaskan spruce bark beetle problem.

Question: If it does not, what level of funding would be necessary for a special satellite inventory of infested lands?

Answer: Due to the fragmented and scattered nature of the native allotments in Alaska, and because most of these allotments are still pending survey and certification by the Bureau of Land Management, we believe it prudent and cost effective to rely upon spatial data acquired by the Native Corporations and other State and Federal agencies. Therefore, we support those agencies in their efforts to secure these tools, and the cost of BIA acquisition of detail products from these agencies can be covered by current program funding.

Question: What funding would be necessary for intensive harvest management of infested lands?

Answer: It would cost the Bureau $420,000 over the next two years to prepare and oversee the treatment of these lands through harvest management if environmental protection mandates were satisfied through a statewide Environmental Impact Statement funded by other governmental agencies.

Question: What funding would be necessary for efforts to help market such timber?

Answer: As native allotments are not under contract, marketing would be accomplished through solicitations in accordance with BIA timber sale procedures. However, because this timber is but a small portion of that which would be offered statewide, combined supply will easily surpass current demand. New markets will have to be developed. The BIA is presently dependent upon the efforts put forth in developing new markets by larger timber owners such as Native Corporations and other state and federal agencies. Therefore, we support their endeavors to secure new markets in the region.

QUESTIONS SUBMITTED BY SENATOR DON NICKLES

Arkansas Riverbed

Question: Last year Congress appropriated funds to expedite the surveys of the Arkansas Riverbed in eastern Oklahoma and asked for a funding level for FY 1991 "necessary to continue this expedited pace of surveying." Why then, has the administration only requested $125,000 (1/6 of last years funding) to continue the needed surveys?

Answer: The FY 1991 budget request includes $245,000 for cadastral surveys for the Arkansas Riverbed. In addition to the $125,000, there was FY 1990 base level funding totalling $120,000 before the Congressional add-on of $400,000. The Bureau believes the amounts budgeted are sufficient to continue the necessary work on the Riverbed.

Question: Please provide the Committee a detailed breakdown of the expenditures and activities funded by the $520,000 provided by Congress for the Arkansas Riverbed surveys in FY 1990.

Answer: The estimated expenditures for Arkansas Riverbed surveys in FY 1990 follow:

Labor	$300,000
Travel	82,000
Rent and Communications	6,000
Vehicle Transportation	23,000
Supplies	36,000
Equipment	12,000

Contract Costs:

River Movement Study	41,000
Reproduction of Aerial Photos	6,000
New Photo Flight Contract	7,000
	$513,000
P.L. 99-177 Sequestration (1.4%)	7,000
Amount appropriated	$520,000

The labor costs support a staff that consists of land surveyors, technicians, and aids and includes six tribal members.

All non-contracted funds are transferred to and expended by the Bureau of Land Management pursuant to a Memorandum of Agreement between the two Bureaus.

Question: Of the 96 miles of riverbed to be surveyed, how many linear miles have so far been completed in FY 1990 and how many more are expected by the end of the fiscal year?

Answer: No "linear" miles of riverbed survey have been completed thus far and none are expected to be completed during FY 1990. There is historical research and preliminary work which must be completed prior to the actual survey.

A letter describing the progress through the end of February 1990, was sent to the Arkansas Riverbed Authority from the State Director of the BLM office in New Mexico. Three survey crews are working on the site at the current time, including six members of the tribe. A fourth crew will be hired. A total of 130 miles of Public Land Survey System re-survey has been accomplished. The re-survey is necessary to provide legal control of the riverbed. The crews will be making initial determinations of the boundaries of the tribal claims to the riverbed photogrammetrically, which will be used for the litigation. The aerial photography flights were to be flown in March. The new photography will be superimposed over photography taken prior to channelization of the river by the Corps of Engineers in order to determine the extent of tribal ownership. A riparian boundary expert has also been hired to perform river movement studies to assist in the determination of tribal ownership.

Question: How many miles are represented in the field survey notes sent to the New Mexico Office of the Bureau of Land Management for approval and certification?

Answer: No surveys have been submitted to the Bureau of Land Management (BLM) New Mexico State Office for approval; such final approval will not be requested until the tribal claims for the riverbed lands have been litigated. Progress on the preliminary work accomplished has been reported to the BLM New Mexico State office.

Question: The Arkansas Riverbed Authority has indicated that the BIA transferred $30,000 to the BLM in 1988 to help expedite certification of the 4 or 5 plats for which field surveys had been completed by March of that year. Has that certification occurred and if so has there been any additional survey work certified?

Answer: The 1988 cadastral surveys were performed to identify boundaries to tribal claims based on a study of river movement completed in 1974. This study included certain inaccuracies and other deficiencies, and it was decided that the river movement within the area covered by the study required further redefinition. Thus, when completed, the current investigations into the river movement will become the basis for litigating the tribal claims to the riverbed. Final surveys of the actual riverbed boundaries, with approved plats, will be prepared from the judicial rulings.

Question: From the experience of the BIA, how long is required by the BLM to review and certify field surveys?

Answer: The review and certification will not occur until after the tribal claims for the riverbed lands have been litigated. The customary approval procedures and timeframes do not apply in this instance as the surveys are of land subject to ongoing litigation.

Question: From the experience of the BIA, what can be done to expedite the cadastral surveys to complete them within the next year or two? (funding, personnel, procedures, etc.?)

Answer: Given the complexities of the riparian surveying needed to define ownership of the riverbed, the interdependencies among the parties to the litigation, and the multiplicity of strategies to be considered in advancing the course of litigation and removal of the trespassers, Bureau staff believes there is little that can be done to expedite the pace of the surveys. The preliminary work which must be completed prior to the actual survey has progressed well in the first two months of this year.

Question: From the 1991 Budget request of the BIA, how much is expected to be applied towards the operation and litigation support activities of the Arkansas Riverbed Authority?

Answer: There has been no predetermined amount identified to support the operation and litigation support activities of the Arkansas Riverbed Authority. Their level of funding will be dependent upon their identified need, justification submitted, the availability of funds, and their priority when compared with other litigation support requests on a nation-wide basis. However, funding priority is given to cases where tribes are in active litigation and/or negotiations, which is the case with the Arkansas riverbed.

Question: Part of the activity of the Arkansas Riverbed Authority is to review land records to determine who claims title to the riverbed lands (abstracting). If none of the riverbed surveys are certified until late in FY 1990 or FY 1991, how can the Riverbed Authority pay for the costs associated with abstract work if there are no FY 1991 funds made available?

Answer: Sufficient FY 1990 funding has been provided by the Bureau for the research and abstracting activities conducted by the Arkansas Riverbed Authority (ARA). It is expected that the ARA will identify and set aside the amounts required to accomplish this task when the approved plats are supplied by BLM.

Question: What is the status of the trespass litigation reports that BIA solicitors were to send to the Department of Justice so that work can begin on prosecution of the trespass claims?

Answer: The work of the Solicitor's Office is synchronized with all other efforts. The Department is working with the Department of Justice (DOJ) on the applicable law to be used in proceeding with the litigation. Input has been sought and received from the attorneys for the three tribes involved in this matter. The first litigation report is expected to be sent to DOJ in mid- to late summer. Key to this process are considerations of "case management" wherein the DOJ, with advice from the tribes and the Department, determines how to aggregate the claims.

Jones Academy

Question: Jones Academy, which is operated by the Choctaw Nation under contract with the BIA, has an urgent need to renovate or replace their dormitories. In fact, it is my understanding that these facilities have received the highest marks for unsafe living conditions. Does the BIA have any plans to remodel these, and if not why not?

Answer: During FY 1990, the following efforts have been undertaken in the construction program to address deficiencies at the Jones Academy. Under the Minor Improvement and Repair (MI&R) program, $22,300 has been provided for a sprinkler system, replacement of fire rating ceiling material, and installation of exit fixtures. In the Facilities Improvement and Repair (FI&R) program, a FY 1988 project to address code compliance problems, including various mechanical and electrical improvements, was completed totalling $207,400. An additional FI&F project in FY 1990 totalling $323,000 will provide for the general correction of deficiencies to two dormitory buildings, including code compliance work.

QUESTIONS SUBMITTED BY SENATOR PETE DOMENICI

Education

Question: As you mention in your testimony, my good friend and distinguished Secretary of the Interior, Manuel Lujan, is personally hosting two education conferences this winter and spring. Will the information gathered from these meetings be utilized in setting the agenda for the White House Conference on Indian Education?

Answer: The Education summits hosted by this Department were convened to identify and implement significant educational reforms in the Bureau of Indian Affairs' education programs. The information gathered in these conferences could certainly be utilized to plan for the White House Conference although this is not the primary purpose of the Department conferences.

Question: Could you generally outline the concerns and priorities for education identified during the first meeting held in Santa Fe, New Mexico, on February 12th?

Answer: The Santa Fe conference focused on the four initiatives outlined in the administration's budget request for FY 1991. In an open forum session, additional issues and concerns were identified such as facilities, paperwork reduction, community health care, condition of school libraries and the role of culture in schools.

Question: Could you follow up on this same question for the record after the second meeting scheduled for March 12th?

Answer: On March 12 and 13 in Rapid City, South Dakota, the Bureau hosted a similar conference to the summit held in Santa Fe. Issues and concerns discussed at the conference included better facilities, more funding for Johnson-O'Malley, additional funds for Technical Support, support for Tribally Controlled Community Colleges, additional funds for Higher Education, funding for Tribal Education Departments, and realization of the government relationship to Education programs. The tribes at the summit stated that the Bureau should be putting more faith in Indian people to manage their own affairs.

Indian Summer Law Program

Question: Mr. Secretary, I am disappointed to see that the Administration has failed to request funding to continue the Indian Summer Law Program that has been carried out by the University of New Mexico since 1967. This eight week program has proved invaluable to Indian students preparing to enter law schools. In fact, many law schools are willing to admit Indian students contingent on their successful completion of this program. The UNM program gives many Indian students the preparation they need to successfully undertake the demanding course load required by law priority fields in the Special Higher Education Scholarship Program and represents a large percentage of the scholarships awarded, the Bureau considers the Summer Law Program to be of lower priority.

Question: The FY 1991 budget request reduces BIA's special higher education scholarships by a total of $360,000 below the base estimate. $160,000 of this reduction is for the UNM summer law program, and $200,000 of this reduction is for special higher education scholarships. The proposed funding level of these scholarships drops from $2.1 million in FY 1990 to $1.8 million in the FY 1991 budget request. The BIA budget justifications indicate that the $200,000 reduction for special higher education scholarships will fund only students who are studying in priority fields. What does the BIA define as priority fields?

Answer: The priority fields of Education, Engineering, Medicine, Law, Natural Resources, Business Administration and Social Work were established a number of years ago based on tribal input. All fields represent areas where graduates might return to serve their respective tribes. Although students in these fields are given funding priority, students pursuing graduate degrees in other fields are also considered for funding.

Question: I note that the largest number of awards are made to students in law school. Why wouldn't the annual investment in the summer pre-law program be justified if it helps Indian students improve their chances of successfully starting a law program?

Answer: As stated above, students in the Summer Law Program have already been accepted into law schools based on their academic record and examination scores. The Summer Law Program is a prep course which may impact the students performance in law school, but it has no impact on their acceptance as law students.

Question: BIA estimates that in the FY 1989/FY 1990 academic year, 69 applicants will apply for 36 awards in "other fields". Will the proposed reduction in the scholarships program eliminate only these awards in "other fields" or are awards in other programs, such as natural resources and engineering, assumed to be eliminated?

Answer: The figures in the budget reflect actual scholarships awarded for school year 1989/90. No fields of study are being eliminated. All students who apply for the graduate scholarships will be considered if they meet the eligibility requirements.

Law Enforcement

Question: Has BIA -- either through headquarters or the Area Offices -- undertaken a comprehensive review of the law enforcement needs of the various pueblos and tribes?

Answer: The Albuquerque area office, Division of Law Enforcement Services, has recently completed a review of the area law enforcement program and will soon be finalizing the results in the Law Enforcement Concept Document. This review was conducted by tribal chiefs of police, BIA criminal investigation staff and agency superintendents. Bureau staff will review the document and may consider including an increased funding request in the FY 1992 Budget Estimates.

Question: Are there specific areas, including illegal drug use and drug trafficking, where BIA is documenting increased crime?

Answer: Data of this type will be collected in the Integrated Police/Law Enforcement Management System (IPLEMS) on a Bureau-wide basis. There have been problems with the system which are being addressed at the current time. The Bureau anticipates that the system will be fully operational during FY 1990, so that data on illegal drug use and trafficking will be available. In the meantime, the Special Investigations Unit (SIU) has established an informal intelligence network that reveals an increase in criminal activity involving illegal narcotics. Through this informal network, specific areas have been identified where illegal drug trafficking is occurring.

Question: Is the Central Office being responsive to law enforcement concerns of the pueblos and tribes? If so, how are you being responsive?

Answer: Although the central office cannot respond with financial assistance, the staff has had discussions with various tribes about alternatives in law enforcement program management to address the tribes' needs. Central office staff has conducted on-site program evaluations, and provided technical assistance and other support in response to various requests from field locations.

Zia Diversion Dam and Siphon System

Question: An urgent situation continues to exist at the Pueblo of Zia in New Mexico with deterioration of the existing diversion dam and siphon, which serve the Pueblo. The situation is such that these structures are in danger of being destroyed with no advance warning to the Pueblo. It appears that both BIA and the Pueblo of Zia are in agreement that these structures should be replaced, for failure of one of these two systems would leave the Pueblo with no water for irrigation. BIA estimates the cost of replacing both structures at just over $1.3 million. Has BIA assessed the situation at the Pueblo of Zia, and would you not characterize the situation there as extremely serious?

Answer: The Bureau has assessed the situation at the Zia Pueblo and considers the situation serious. The Bureau will consider the possibility of reprogramming other construction funds to address the situation in FY 1990.

Question: The FY 1991 budget includes only $2.3 million for the construction of irrigation systems through BIA. The request is $27 million below the FY 1990 enacted level due to the Administration's proposal for essentially no new project construction, and its proposal that the Bureau of Reclamation take over the BIA's safety of dams program. What is the rationale for suspending its irrigation construction program?

Answer: Maintaining and improving existing irrigation structures and systems is a higher priority than starting new construction. The 41 FTE in the irrigation systems program will be devoted to maintenance rather than new project construction.

Question: For what purpose is $1.7 million in engineering and supervision costs requested if BIA suspends project construction activities?

Answer: The engineering and supervision costs are required to continue the day-to-day administration, operation and maintenance for irrigation projects throughout the country and the three Indian electric power projects. In addition, the engineering staff are called upon to assist in Indian water rights activities.

Question: How do you propose that pueblos and tribes address these serious systems problems without the continuing support of BIA's irrigation program?

Answer: The Bureau has initiated plans, with the involvement of the Inter-tribal Agriculture Council, to review the approximately 150 irrigation systems and projects to determine such things as how much of each original project plan is completed; what are the associated cost estimates; what is the inventory and physical condition of the completed irrigation works; and list the economic and non-economic costs and benefits for rehabilitation, improvement, and completion of the projects. The Council will involve all irrigation managers and engineers in the development of this information.

Eight Northern Pueblos School Repairs

Question: Last year, under the leadership of the distinguished Chairman, the Subcommittee recognized the urgent safety situation of schools serving the Eight Northern Pueblos in New Mexico.

The schools that serve the Eight Northern Pueblos were all constructed in the late 1920's and early 1930's and have been determined to be out of compliance with the provisions of the Occupational Safety and Health Act of 1970, the National Fire Code, the Uniform Building and Plumbing Codes, and 25 BIAM. Most of these facilities need to be replaced, but in the absence of sufficient funding to proceed on that front, the Subcommittee approved $500,000 to address the most serious safety deficiencies.

I was very grateful for the support of the Subcommittee to address these repairs. The conferees also recognized the urgency of these repairs by expressing their understanding that the high priority safety needs of the Eight Northern Pueblos schools will be addressed by the BIA through its facilities improvement and repair programs. Has BIA proceeded with the priority repairs identified at schools serving the Eight Northern Pueblos?

Answer: Yes. The Bureau has been actively working on the priority repairs identified at the school locations.

Question: Would you provide for the record a detailed listing of the repairs made and the dollars expended to address these serious safety deficiencies?

Answer: Over $140,000 was provided to cover code compliance projects, as noted below. The installation and repair of fire alarm systems in critical buildings was undertaken at Taos, Santa Clara, San Ildefonso, Tesuque, and San Juan. The removal and installation of fire rated paneling in three portable buildings took place at Santa Clara. Additionally, $106,000 was provided to provided to replace two unsafe trailers used for classrooms with two new portable classrooms at Tesuque. Various Area Office staff were detailed over six months to Northern Pueblo sites to update the facilities backlog data in order to accurately determine project requirements. As a result, over $150,000 of funding is planned in the Minor Improvement and Repair (MI&R) program as a priority for safety problems identified. Also, under the Facilities Improvement and Repair (FI&R) program, roofing projects are included San Ildefonso, Taos, and San Juan. Based on a recent site validation study performed at the Santa Clara school, an FI&R project for renovation of the existing site, in lieu of new construction, has been recommended by the Area Office.

Question: How much will BIA spend to renovate these schools in FY 1990?

Answer: During FY 1990, $12,500 of Minor Improvement and Repair (MI&R) funds has been allotted for items noted below. At the Taos School, a project has been undertaken to correct water damaged adobe walls. This project is in the procurement phase. A separate project for asbestos abatement is in the design phase. Also, at Tesuque, $10,000 was provided to address handicapped access.

In the Facilities Improvement and Repair (FI&R) program, roof repair projects are in the design phase for the following locations: San Ildefonso Elementary School ($26,000), San Juan Elementary School ($32,000), and Taos Elementary School ($112,000).

Question: Does BIA anticipate the need for additional work on these schools in FY 1991? If so, what is the estimated cost of these further repairs?

Answer: The Bureau's Facilities Management Construction Center (FMCC) has determined that locations would best be served by the addition of more portable buildings until such time as needs/planning studies, prioritization and funding can be arranged for more permanent solutions. Assessment of the needs at these sites is underway to more fully determine to what extent additional work may be accomplished within available funds.

As a result, a team of staff experts has inspected five locations and identified new, and validated existing, deficiencies which will be entered in the backlog system upon review by the Agency and Area. The team's written report was begun on April 6th and is currently underway. Once it is completed and the deficiencies entered into the backlog, funding will be made available to begin addressing them. Deficiencies will be corrected on a prioritized basis. Any identified, life threatening deficiencies will be addressed immediately, in accordance with established procedures.

Additionally, at the Santa Clara School, a site validation was performed in June, 1989. As a result, it was recommended that major improvements be made to the K-6 school. It noted that the existing school is comprised of numerous small buildings that have significant functional and physical deficiencies. Also, it noted that a portion of this school is salvageable; the existing school buildings will be made useable, via a project of upgrading, partial demolition and partial replacement. Currently, a Program of Requirements (POR) is being expanded to enable starting the design. The estimated cost for the project is $1,125,000, with backlog items totalling $53,300.

SUBCOMMITTEE RECESS

Senator REID. I thank you very much. The subcommittee will stand in recess until 10 a.m., Tuesday, March 20, when we will hear testimony from the Minerals Management Service and the Fish and Wildlife Service.

[Whereupon, at 12 m., Tuesday, March 6, the subcommittee was recessed, to reconvene at 10 a.m., Tuesday, March 20.]

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1991

TUESDAY, MARCH 20, 1990

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m. in room S–128, the Capitol, Hon. Harry M. Reid presiding.

Present: Senators Reid, McClure, and Domenici.

SMITHSONIAN INSTITUTION

STATEMENT OF ROBERT McC. ADAMS, SECRETARY

ACCOMPANIED BY:

DEAN W. ANDERSON, UNDER SECRETARY

NANCY D. SUTTENFIELD, DIRECTOR, OFFICE OF PLANNING AND BUDGET

BUDGET REQUEST

Senator REID. The subcommittee will come to order. Today we will review the fiscal year 1991 budget request for the Smithsonian Institution. Testifying in support of that request will be the Secretary, Mr. Adams.

The Smithsonian's request is $307,690,000, an increase of $41,000,000, or 15 percent, over the current year appropriation of $266,690,000. In addition, an employment level of 4,510 full-time equivalents is proposed, which is 113 more than the fiscal year 1990 program.

The proposed $41 million increase includes a $30,695,000 increase for salaries and expenses, a $2,188,000 increase for repair and restoration, a $248,000 increase for zoo construction and improvements, and a $7,869,000 increase for other construction.

PREPARED STATEMENT

Welcome before the subcommittee this morning, Mr. Secretary. We have your written statement and it will be made a part of the record. If you wish to introduce your associates, you may do so. Then if you would summarize your statement, which I have read in its entirety, it would be appreciated.

[The statement follows:]

STATEMENT OF ROBERT McC. ADAMS

Mr. Chairman and Members of the Subcommittee

It is my privilege to appear again before the Subcommittee to share with you some reflections on the present state and future directions of the Smithsonian and to testify on behalf of the Institution's FY 1991 budget request. I would like to express my deep appreciation to you for your continued support of the programs and activities of the Institution in this time of epochal change and accelerating international developments, in Eastern Europe, in Germany, in South Africa, in Central America, and even in the Soviet Union.

These events, I believe, provide a remarkable setting for our own Institutional stocktaking and direction. Unfolding before our eyes has been a wide, often sudden, and seemingly unplanned array of extraordinary world changes. Some of them have genuinely empowered and facilitated the forces of reform, others merely recognized and legitimated them, and still others have patently attempted, with what I hope is only temporary success, to stifle massive, spontaneous movements toward human rights and democratization. What better background could there be for our own Institutional consideration of the interplay between structure and function; between vision and reality; between status quo perspectives about knowledge, culture and the arts, and the challenges of cultural pluralism brought on by rapidly changing demographics in our country?

In giving form to these considerations over the next several years, the Institution will seek to apply resources to three general areas of endeavor. Our budget request for FY 1991 and our recent Five-Year Prospectus highlight steps that I believe will be seen as encouraging and facilitating needed changes in our own outlook and program, rather than marking time as both national and world events overtake us.

Our total request for FY 1991 is $307.7 million. After meeting uncontrollable cost increases for such items as utilities and pay, the requested Salaries and Expenses increase amounts to $15.7 million. A total of $51.5 million is sought for facilities construction, construction planning, and improvements.

Infrastructure Requirements

The first point I wish to make is that the Institution has examined its capacity to be steward of the Smithsonian trust. We have found both our facilities, including our landholdings, and our program infrastructure greatly deficient to meet the growing and changing demands being placed on us by the increasingly diverse audiences that we must serve.

The refurbishment of our infrastructure encompasses many operational tasks. These range from replacing outdated exhibitions, to improving the care and custody of collections, to increasing accessibility to both collections and programs and providing our scholars with the instruments and assistance they need to carry on high-quality research. These tasks also encompass strengthening the virtually invisible support systems which are, nonetheless, absolutely essential for effective delivery of Institutional services to the general public as well as to the individual researcher outside the Institution.

I want to underscore the need to address these program infrastructure requirements by highlighting one critical area: the application of advanced technology to information processing. The term "information processing," which once referred exclusively to installed computing systems and their support functions, is now used in most large corporations to characterize the flow and control of all information throughout an entire organization. While we have made progress in updating our computer systems over the past several years, the Institution's ability to fully utilize advanced technology to foster more effective information processing in this broader sense is still woefully inadequate.

It is imperative that we begin to incorporate more strategic thinking with regard to our information systems. This thinking will get right to the core of many Smithsonian management issues, allowing us to design and implement systems to serve our needs, as opposed to predetermined, piecemeal solutions offered by systems already in place. The advantages of a more rigorous and aggressive information management plan are many. To enumerate a few:

-- more rapid and inclusive communication among the bureaux and departments of the Institution through distributive processing, electronic mail and file sharing facilities;

-- less opportunity for redundant systems development work;

-- more coordinated and focused planning with regard to information use throughout the Institution;

-- potential cost savings by minimizing duplicative start-ups; and

-- the utilization of collection, research and administrative information in ways never before possible through cross-referencing and online access.

Making the full use of today's (and tomorrow's) technologies will require significant long-term investments in resources, well beyond what our available base funding can support. However, like our various other program infrastructure needs, these additional resources do not constitute new or growing programs, but rather necessary funding to carry out current programs more effectively and efficiently. Addressing these infrastructure gaps is the only solution to both meet today's research, education and administrative objectives and lay the foundation for future advancement.

To begin to address our varied infrastructure needs, our request focuses on resources for automated and other systems for daily management of the Institution's programs, for uninterrupted improvements in the instrumentation available for research, for exhibits reinstallation, and for other stewardship responsibilities. Approximately $7.5 million is being sought for the Institution's operating infrastructure, including $1.2 million for information systems, $4.4 million for SAO's two major telescope projects, and $0.9 million for the replacement of permanent exhibits.

In addition, approximately $43.4 million is requested for our facilities infrastructure. This amount will continue our major capital renewal program ($13.9 million), repairs to buildings and projects for compliance with various structural codes ($14.7 million), and construction planning, modifications, and improvements to Smithsonian facilities ($8.1 million) and to National Zoological Park facilities ($6.7 million).

As a matter of information to the Subcommittee in the context of our facilities planning and infrastructure needs, I should mention that we expect to issue shortly a Request for Proposal to obtain offers for a larger replacement facility for our presently leased North Capitol Street Building. This building will serve a wide range of specialized uses, such as exhibition preparation and printing, that support activities both on the Mall and in other Smithsonian operations off the Mall. We are exploring all options for funding such a replacement facility. Given the construction priorities before us, it is likely that the best way to acquire this facility is under a lease-purchase arrangement with a private developer similar to the approach used for the International Cultural and Trade Center. Following our investigation, we expect to present a proposal in the FY 1992 budget.

In regard to longer-term construction priorities, I might mention here that all options for funding the National Air and Space Museum extension, for which the Dulles International Airport site was recently approved by the Regents, are also under consideration. Institutional discussions continue with officials of the Commonwealth of Virginia and other potential supporters.

Our plans call for the National Museum of Natural History to enter the 21st century substantially renovated and revitalized, with completely new mechanical systems throughout the building and new public halls. Renovation is a complex undertaking involving the orchestration of complex procedures. The mechanical systems need to be replaced without evacuating the building or disrupting the scientific research, exhibition, and public activities of the Museum. We are considering ways to provide staging space for programs and activities in the East Court of the Museum, to continue the rehabilitation of exhibition halls, and to accelerate the removal of collections in storage areas that will be refurbished. The FY 1991 Construction budget contains a request of $1.5 million for renovation planning to assure that these complex interlocking activities proceed as smoothly as possible.

Exemplifying the Nation's Pluralism

Second, I believe that an overarching responsibility for preserving and articulating the nation's cultural heritage is likely to be the Smithsonian's greatest challenge for a good many years to come. The Smithsonian is here to engage and to serve all segments of our population, as well as to address a worldwide community of scholars and audiences. It cannot narrowly favor, idealize, or reify purported "mainstream" cultures or values. Ours is a multiracial, pluralistic country. Museums can and should play an important role in dispelling the negative stereotyping of race, ethnicity, and gender. We must assure that our employment, education, and outreach efforts are sensitive and responsive to the conditions, needs, and aspirations of our many audiences and professional sectors.

Therefore, the Institution in FY 1991 is seeking $15.4 million to exemplify the nation's growing cultural pluralism. Of special note in this regard are the gratifying endorsement and support of Congress and the President for the Institution's newest endeavor in this direction, the creation of the National Museum of the American Indian.

This new National Museum is at the forefront of our undertaking. Nothing is more appropriate, I believe, than for the First Americans to be at the head and heart of our effort to study, interpret, and celebrate the diverse cultural experiences that constitute this Nation

--and for their Museum to become a flagship of hemispheric cultural diversity.

With the formal establishment of the Museum this past November, initial planning and design of programs and facilities for the Museum are proceeding on schedule. The Institution and the Museum of the American Indian, Heye Foundation, are obtaining approval by the Supreme Court of New York for the transfer of the Foundation's collection and other property, and we are looking forward to the completion of the transfer in the near future. The Board of the new museum, established at the most recent meeting of our Regents, includes in its membership leading Indian scholars and administrators, drawn from a number of various tribes. In addition, in January, the Institution began the search for architectural and facilities services.

I want to emphasize that this Museum, to an unprecedented extent, will "belong" to Native Americans. Under Native American leadership, the Museum will be devoted not to the timeless past of Hollywood mythmaking (or to the too-frequent misconceptions of school textbooks) but to the full intellectual, artistic, and cultural achievements of a living people--a heterogenous people with many beliefs and forms of material expression who speak to the world in many voices of their hopes and tragedies and permanent places in the family of humanity.

Our budget for FY 1991 calls for the next increment of resources to translate this vision into reality. An increase of $5.3 million is sought for program development and operations, and $8.1 million will advance the construction planning and design process.

To further exemplify the Nation's pluralism, the Institution is requesting additional funds to commemorate the Quincentenary of the arrival of Columbus in the New World. The activities that the Institution is preparing will in no sense deny the importance of the single act of "discovery" by an intrepid navigator but will focus instead on the vast, prolonged, and absolutely unprecedented "encounter" between streams of civilization that had previously been unaware of one another.

The significance of this encounter towers above the origins of this or that kind of government or even the fate of this or that group of humans. The encounter marks one of the major discontinuities in the course of life on this planet. Measuring its influence requires reference to a scale of time far greater than historians or archaeologists normally consult.

The changes to manifold cultural processes wrought by the encounter transcend the discoveries of the great geologists, biologists, and thinkers of the eighteenth and nineteenth centuries. To find comparable changes we must go back beyond recorded time to the divisions between the periods of geologic history that were characterized by the separation of continents, the rising up of mountains, and the draining of inland seas. The activities we plan will highlight the permanent importance of this unique juncture in human history.

The National Museum of the American Indian and the Quincentenary commemorations provide the basis for gaining new Institutional experience in fulfilling responsibilities to exemplify cultural pluralism. As we proceed, these experiences will set the pattern for the Institution's national and international outreach. The pattern will help shape, for example, the expansion and incorporation of African American programs and facilities on the Mall. This effort will differ in detail from the National Museum of the American Indian and the Quincentenary, but it will be informed by the same vital force of cultural pluralism. Before plunging ahead with major new collecting capabilities, programs, or facilities, the Institution is deliberately taking into account the important needs and potentialities of the African American Museum Association with its hundred or so members. Our current planning and program development process is designed to guide and expand initiatives leading to a new entity for the study and public exhibition of African American history, culture, and art. This entity could be a research center and archive, a noncollecting gallery, an extension of an existing museum, a trust for the promotion of established African American programs and museums, or a new and separate facility. At the same time, through this new initiative, the Smithsonian will be able to identify ways to enhance current African-American programming throughout its other museums and programs, including the Museum of American History, the Anacostia Museum, SITES, the Office of Folklife Programs, and the Institution's art museums and research bureaus. Our planning will ultimately benefit from the counsel of distinguished members of the academic, cultural, and corporate communities and from the examination of African American programs at the Smithsonian and throughout the country.

To further our exemplification efforts in these various regards, including related efforts such as the repatriation of skeletal remains and funerary objects and special multicultural employment initiatives, the FY 1991 budget contains a request for additional resources of $2 million.

Understanding the Global Environment

A third major focus in this year's budget for advancement of Institutional research specialties over the next years involves the Institution's interests in monitoring, understanding, and moving to arrest the deterioration of the global environment. This is a crucial focus of Smithsonian effort, given our long tradition as a world center of research in natural history and our concentration of expertise in many of the relevant fields.

Several daunting, intersecting aspects of global environmental degradation have compelled us to consider carefully where our comparative advantages as an Institution direct us to place our primary attention. One is its enormous scale and complexity, dictating scientific efforts of unprecedented size that call upon the collaboration of specialists in many disciplines and many countries. Another is the incomplete understanding around the world of potential interactions among governing parameters of environmental change that could lead to sudden and serious permanent results. Still another is the inadequate base of information, especially long-term data, on which models of dynamic interaction can be tested and extended to provide reliable predictions.

The Institution's initial contribution to the massive scientific efforts now under way will focus on one of our greatest traditional centers of strength, the study of tropical rainforests. Tropical deforestation is a most devastating element in the present complex of destructive environmental changes.

The annual burning of tropical rainforests generates a billion tons of excess carbon to the atmosphere, contributing perhaps a fifth of the increasing proportion of carbon dioxide responsible for the "greenhouse effect." Quite apart from this, deforestation has catastrophic, irreversible consequences for maintaining hydrologic cycles, landscapes, soil stability, biodiversity and the way of life for many indigenous peoples.

Efforts to understand the impact of deforestation must begin with securely established species identification and classification. This is, of course, a major concern of our National Museum of Natural History. Equally crucial to the same set of efforts is the Smithsonian Tropical Research Institute in Panama, with its understanding of neotropical rainforests that draws upon nearly 70 years of ongoing studies. At SERC, studies continue on the effects of increased CO_2 on plant growth, since plant responses will be important in predicting the rate of increase of CO_2 in the atmosphere. In addition, we need to increase our understanding of survival and propagation methods for various species of plants and animals for future research benefits to agriculture and medicine and for social and economic uses that have yet to be discovered.

The $1 million increase contained in this budget encompasses the Institution's screening of important ways it can immediately increase its contribution to understanding and eventually arresting the processes of global environmental deterioration. It has been widely observed by the international scientific community that some of these processes, originally more controllable because they were localized and hence partially isolated from one another, are now spreading and ominously converging to suggest the onset of a deep-seated and intractable crisis. International means of coping with these processes urgently need to be addressed, and the Institution is determined to strengthen its participation in related scientific efforts.

Some Issues Bearing on FY 1990

Our financial operations for the current year are under continuing scrutiny as we take action to respond to the Gramm-Rudman-Hollings reductions, to the need to absorb pay and utility costs within our S&E account, and to a significant decrease of income from our auxiliary activities. We anticipate curtailing expenditures in both our federal and trust budgets to offset these reductions. Unfortunately, due to these factors it will not be possible to offer extended hours this spring and summer. The cost of extended hours has increased, now amounting to approximately $525,000. Most of this expense is for additional summer staff within our Office of Protection Services, which this year had to absorb a budget reduction of $1.2 million related to the above set of factors. Funds for summer hours are not available elsewhere in the Institution on account of these same factors, and efforts to raise such funds in the private sector have been unsuccessful.

We are also making a careful assessment of the extent to which our operations in Panama have been disrupted by the recent events in that country. We are thankful that our people suffered no injury and no loss of life, and we sustained no significant harm to facilities, ongoing research, or other activities. Our review will reflect our increased concerns about the security of our various activities and sites--in particular the protection of forests and their human and animal populations.

As the Subcommittee may be aware, legislation has been introduced by our Congressional Regents to establish a Smithsonian Institution Senior Service. This proposal is aimed at assuring that we are not disadvantaged by pay raises for the Senior Executive Service. The Smithsonian is not in the SES by determination of the Office of Personnel Management. Salaries for our civil service senior staff, including senior curators and researchers, are on the General Schedule, and they threaten to lag far behind comparable jobs in the SES. Congressional support for the Smithsonian legislation is critical in order for us to be competitive.

With these thoughts, I close my statement.

INTRODUCTION OF ASSOCIATES

Secretary ADAMS. Thank you, Mr. Chairman. On my left is Mr. Dean W. Anderson, who is the Under Secretary of the Institution. On my right is Nancy D. Suttenfield, Director of our Office of Planning and Budget. In addition, a number of senior colleagues are here from other parts of the Institution, assistant secretaries and directors of some of our bureaus, and you may want to call on them.

INFRASTRUCTURE PROBLEMS

I will try to be brief in my summary because I think the major points are covered in the written testimony. But the position that I would like to give emphasis to is that the Smithsonian is, in fact, encountering critical problems in coping with its present budget, which on the surface might appear to represent a healthy increase, but most of that increase is devoted to mandatory increases over which we have no control. And the fact is that they are at levels that for a large part, I think, escape public notice.

We are operating at a level which involves serious long-term effects on the quality of our programs. I would first say that those problems are at the levels of our infrastructure. Problems that are characteristic of universities, museums, and hospitals are certainly also characteristic of ours. Not only are there problems of bricks and mortar, although there, too, I don't think we are maintaining appropriate levels that over the long run will keep our structures in the repair. But in addition to the problems of bricks and mortar, I think we face a general inability to move as rapidly as we should in the replacement and improvement of our instrumentation, including the telescopes of our astrophysical observatory, lab equipment, and computers. I think in many respects we lag behind comparable institutions in these areas.

There are similar problems in our stewardship of our collections, where I think there is some acceleration in deterioration that obviously is a source of concern to us, and in our capacity to keep up with the cataloging of the material in our collections. Other problems affect the long-term survival of our library and our archival materials.

What I guess I can call an infrastructural problem of a somewhat different kind is that we face a chronic inability, particularly at the senior levels, to retain the very best possible staff or to attract them when there are positions available. We are pleased that one of our regents is introducing a bill that would speak to the creation of a Smithsonian senior executive service that would be directed toward this, and I hope that indeed succeeds.

CULTURAL PLURALISM

The two major programmatic areas that I should very briefly touch on, where it seems to me we have long-term responsibilities that need to be met, are, first of all, with regard to cultural pluralism. The Smithsonian needs to be sensitive to relationships with and the expectations of multiple constituencies in this country. I think we've made some progress in doing so. We need to make more.

This touches on issues of affirmative action, and also of course concerns the impending progress on the National Museum of the American Indian. It concerns studies of our African American programming, our Anacostia Museum, and, finally, the quincentenary of Columbus, which obviously improves relationships between the Smithsonian and the Hispanic population in this country.

GLOBAL CHANGE RESEARCH

The second area is global change and diversity, in which Smithsonian has a primary role to play through its major investments over many years, many decades, particularly in the field of tropical biology where the dangers of ongoing global change are perhaps most considerable. Our national collections and the National Museum of Natural History are one of the great resources of the world, in fact, for the encyclopedic study of global change, and we are indeed making investments in that respect, too.

TRUST FUND RESOURCES

The final point I make is that problems that we are encountering on the appropriated side of our budget are paralleled by declining possibilities for increases, beyond maintaining a plateau of income, from our trust resources, our private resources.

What is involved in that is in part the plateauing of income from our stores and other activities of that kind, advertising income from the magazines and so on.

So, we are, in fact, facing problems across our entire budget as well as in the part that we will be discussing here today. I think that I will break off at that point, Mr. Chairman. And my colleagues and I are certainly ready to try to handle your questions.

BUDGET PRIORITIES

Senator REID. Secretary Adams, I am interested in your statement here. And I have to tell you that I am concerned about the presentation. I am concerned not only about the prepared text but by the various statements that have been made at least on the part of the Washington Post about, in effect, threatening to close the museums at various times during the summer.

So I think it is important that I get this started the way that I feel that I should and ask you what is going on. It sounds like maybe there should be more funds for management. You look at some of the things—for example, considering the repair and restoration backlog, inability to continue traditional summer hours, gallery closures, and inspector general findings. And I at least, personally, question why the Smithsonian is grasping for money for a floating lab in Panama, telescope construction projects with locations in Arizona or Hawaii, and for an American Indian museum which appears to be overly ambitious and, by some accounts, inadequate planning. The Air and Space Museum annex and American display are also under discussion.

I can continue my list of projects which are taking the place of maintaining our buildings and serving the public. I haven't mentioned the global warming initiatives. As I mentioned to my colleagues while we were waiting for the court reporter, it seems like everyone is into global warming. Every agency that comes before us has a project for global warming. A third of the U.S. Geological Survey's new budget proposal involves global warming matters.

So, by your own admission you are unable because of budget constraints to keep the doors of the facilities open to the public. We are receiving complaints about Smithsonian's choices, and I must say, from what I've read and how I analyze this, I consider some of these complaints to be well-founded. I have to tell you that you come into this with a lot of chips because of the great reputation the Smithsonian has. And that is something that we have to be concerned about. Having said that, I don't think that the committee can, in effect, be coerced or threatened with closure of what the public deems important, that is, to be able to walk through the museums.

So, let me ask you a couple of questions with that brief statement. What avenues have you pursued in looking for ways to finance the shortages in the funding for operating hours and maintenance? And why have you not closed programming in other areas in order to adequately fund summer hours?

FUNDING FOR SUMMER HOURS

Secretary **ADAMS**. Mr. Chairman, we have never been in a position to include summer hours in our regular budget other than as we can, in fact, find ways to reprogram. They have never been a feature of our regular budget.

This year, with a budget that is, at least in our view, more constrained than it has ever been before, we simply don't see how to fund the summer hours. It isn't that this is something that has regularly been a part of our budget and that we have cut back. That isn't the case at all.

I might point out that I wrote a letter to Senator Byrd in November, indicating that, because of the failure of the Congress to approve the transfer of the utility payments to the Smithsonian, as was expected by this committee, we would be faced with cutbacks in exactly this area during fiscal 1990. This is a case where we could foresee the trouble coming and did notify the committee on it last November.

I don't think that it was a question of our not being aware of what the problem was. It was a question of our not knowing what we could do to make up for that problem.

IMPACTS OF CURRENT BUDGETARY PROBLEMS

And I think that we should perhaps go on to indicate that we are operating well below ceiling in many places simply in order to hold back funds to cover these. There are some 60 unfilled positions in the National Museum of Natural History which have been held back in order to try to protect our basic position. There are no acquisition funds available in the National Museum of American History for the same reason.

I think that the impacts on the Smithsonian of this present budgetary problem are really very severe and are being felt all across the Institution. I don't really think it is the case that we have continued to expand in a variety of areas irresponsibly. I think we do have a variety of responsibilities that we will presently come to in the areas you mentioned and I am happy to speak to them.

Senator REID. Let's do that. Looking at it from the perspective of someone that has been given the assignment by Senator Byrd—and I sit on some of these subcommittees separate and apart from that—all agencies are stricken with a lack of money.

Secretary ADAMS. I understand.

Senator REID. I talked to Dr. Billington of the Library of Congress and he has severe monetary problems. One out of every eight positions he can't fill. And they have thousands and thousands of employees who are at the Library of Congress, so we are talking about lots and lots of people, a lot more than 60 positions that aren't filled there.

We have books that aren't being cataloged, books that aren't being restored that really might be lost forever. But at least we are trying to guard—and he is—against new programs. That is the concern that I have, is how can we justify these new programs when we are talking about things like cutting back the hours?

Secretary ADAMS. Let me point out, Mr. Chairman, that when you speak of cutting back the hours, we are not cutting them back below their regular level. We are simply maintaining the level hours of the institution.

Senator REID. Are you saying you are just not extending them?

Secretary ADAMS. We are not extending them during the summer. And let me point out that we have kept records of the attendance, and the attendance falls off very sharply during those hours. The total summer attendance during the extended hours last year was approximately 265,000. That is about one-sixth of what would come in during a 2-hour period in the morning in the regular hours.

Senator REID. That is beginning to make a little more sense. If you have a basis—we have a lot of important programs. The Smithsonian has engaged in all kinds of things that I think are fortunate. But perhaps the way that this has been approached, at least in your approach to the subcommittee and your other approaches to others, I don't know, but maybe you would have been better off pointing out that those extra hours are not productive.

Secretary ADAMS. Well, I don't want to say they are not productive for the people who have no other opportunity to come other than during those hours. One hesitates to make a calculation of how important it is to someone who has no other opportunity than during those hours, so I resisted doing that. But that certainly went into our calculation. We were trying to look at the cost-benefit pattern, so to speak, across the whole thing.

Senator **Reid**. Before I turn this over to my colleagues, I would ask that you spend a little bit of time justifying how you can ask for new moneys for new programs, and cut back on things such as the summer hours.

Secretary **Adams**. Well, if we speak of new programs, let me take two that you mentioned. And I think they have somewhat different explanations.

NATIONAL MUSEUM OF THE AMERICAN INDIAN

First of all, there is the National Museum of the American Indian. I should point out that this was passed, without dissent, by both Houses, and it represents an initiative in which I think there was felt to be major national support for moving in this direction, support that was also felt at the White House and expressed at the White House.

Senator **Reid**. Obviously, from what the OMB did with your budget submission, in which you asked for *x* number of dollars and, surprise of all surprises, rather than get less you got more than you asked for.

Secretary **Adams**. Well, I admit that we too may have been surprised by that. But that is at a level of decisionmaking that I don't have any personal influence over.

The present situation with regard to the existing Museum of the American Indian in New York, which hasn't yet been transferred to the Smithsonian's jurisdiction, is that it is just about bankrupt. It is at the very edge of its resources. There is nothing further to carry on with at that museum in New York. And I think it was a calculation of that kind that also led the White House and the Congress to feel they had to move ahead on this, that the collection, the private means to maintain that collection were just about gone, and that certainly entered into the decision that was made.

AIR AND SPACE MUSEUM EXTENSION

With regard to the Air and Space Museum, if I may turn to that for a moment, I make no prediction when the Smithsonian will be in a position to ask for the appropriation to move forward in that area. It does seem to me that the Institution has a responsibility in the very long run to maintain the collections within the field of air and space, where the leadership of this country has been second to none in this century in an achievement which I think will forever stand for what the United States is capable of.

Whether we will be able to begin next year or 5 years from now ~~is~~ not something that we have made any commitments on. In this sense I don't think that should be regarded as a sort of a wild budgetary exercise on our part. We are well aware that the funds are not going to be there at the moment. We are well aware that it took between 1945, when the present Air and Space facility was authorized, and 1970 before the first funds were appropriated for that construction. And it is in that spirit that we have gone forward in our negotiations with Virginia. I hope it will not be that long for that, but all I am saying is the authorization may be a very considerable distance from the appropriation.

Those are two programs that I think have a somewhat better case to be made for them as appearing in our planning than you have indicated.

Senator **Reid**. Your colleague there is champing at the bit.

INFRASTRUCTURE SUPPORT

Mr. **Anderson**. I might also try to put some of the decreases and increases that have been discussed in some context concerning the budget that is before the committee for its review.

OMB, it is true, did cut our request to the administration significantly, particularly in the areas of infrastructure support. However, the allowance that the President permitted does have in it over $6 million to plug holes that are caused on a one-time basis this year because of the water and sewer charge absorption, because of pay raise absorption, and because of worker's compensation costs.

Now, that is one-time bottoming out, if you will, of our ability to keep on board the kind of staff necessary to keep all of the galleries open, for example. It is also the principal reason why we have such shortages in a variety of places around the campus. Simple approval of the budget that is here will erase about 90 percent of the problem that we are having this year. In other words, it is not guns or butter, if you will; it is not galleries or new starts. The budget before you significantly repairs the infrastructure problems of the sort that have already been discussed concerning keeping the place open to the public.

Now, for this year, this bottoming out year, we are indeed engaged in reprogramming of a variety of sorts.

First, on the floor, if you will, in each museum we are conducting a review of the location of guard posts so as to make sure we are getting the maximum coverage for the staff that we already have. That in itself may prevent some gallery closings.

In addition to that, there will be reprogrammings between line items in the Smithsonian's budget, still within the "Salaries and expense" account, to make sure that as we bottom out in a budgetary sense we do not bottom out in a public service sense. In other words, we are going to be able to maintain the status quo despite the one-time effect of these budget cuts.

Now, the only way that that can happen is through further belt-tightening on the part of programmatic activities. The Secretary is absolutely right: acquisition funds have been cut to the bone. Several of our museums no longer have Federal funds for exhibition purposes. The only exhibition activity is that which is supported by the private sector, which is a peculiar way for a national museum to run itself because it holds the subject matters that we can present to the public hostage to the whims of the profit sector, and I'm not sure that is healthy in the long run.

MUSEUM GALLERY CLOSINGS

Finally, with regard to the matter of gallery closings, I think what got reported in the newspaper was a leak of an internal memorandum about a worst-case scenario. That is not what was intended, but——

Senator REID. We are not familiar up here with newspaper leaks.

Mr. ANDERSON. I am sure you are not, Mr. Chairman. It certainly represented no attempt on the part of management of the Smithsonian to manipulate the environment within which this session takes place, for example, because we know that it would have precisely the opposite effect.

Secretary ADAMS. In fact, Mr. Chairman, our problem, as Mr. Anderson has just indicated, is in the current fiscal year. The problem of the inadequacy of the size of our guard posts will not be present under the budget that is before you. And we do intend somehow or another to reprogram funds in order to make up for the guard deficits this summer, in order not to let that be a source of closing of galleries. We have many galleries that have repairs underway that may have to be closed, but we do intend somehow or another to fill the gap this summer. But that is not a feature of the budget that is before you.

Mr. ANDERSON. The final comment I would make, Mr. Chairman, is that I said only about 90 percent of the problem we have been talking about would be rectified by simple approval of the President's budget. There is a structural base deficiency in our Office of Protection Services that would not be touched by these numbers. That may represent as much as another $1 million that we have had in prior years to reprogram from other sources annually, simply in order to keep up to full strength.

Now, we aren't able to do that this year, make that kind of reprogramming, because of budget cuts in all sorts of areas: the Gramm-Rudman cut, the water and sewer absorption, the pay raise cut, lots of things.

Consequently, not only aren't we able easily to reprogram for that structural deficiency, the Office of Protection Services itself has been hit by those same budget reductions. So, it is a one-time hole, but we get most of the way out of it simply with approval of the budget as it stands. The residual piece would still be missing.

Senator REID. I'm going to have made part of the record a Tuesday, January 30, 1990, article out of the Washington Post written by Elizabeth Kastor, and one of Friday, March 16, from the Post by the same woman, dealing with the Smithsonian. In these articles are direct quotes. One is from the Secretary and there is another from a woman by the name of Madeleine Jacobs. Both of those are direct quotes about closing of the galleries.

Secretary ADAMS. I never spoke with Mrs. Kastor.

Senator REID. We will make this part of the record. It is a direct quote.

> It looks highly unusual in the current budget situation, but these increases are for uncontrollable costs, such as utility expenses, Smithsonian Secretary Robert McC. Adams said of the $41 million increase.

Mr. ANDERSON. This is part of the press release?

Senator REID. So, we will make those part of the record.

[The information follows:]

[From the Washington Post, Jan. 30, 1990]

SMALL BOOST FOR THE ARTS

BUSH BUDGET ENDS YEARS OF NO-GROWTH

(By Elizabeth Kastor)

In his first full budget request, George Bush asked for small increases in funding for the arts and humanities, including the Smithsonian Institution and the National Endowments for the Humanities and the Arts.

The proposed budget, sent to Congress yesterday, includes a request for $307.7 million for the Smithsonian, a 15.4 percent increase over the fiscal 1990 appropriation. Much of that money is earmarked for the planning and design of the new National Museum of the American Indian, as well as continuing maintenance and renovation.

A $3.7 million increase for the National Endowment for the Arts (NEA), up from last year's $171 million allocation, is "a modest increase percentage-wise," said NEA Chairman John Fronmayer. But for an agency that has gone through a year of political turmoil and had been kept at essentially level funding during the Reagan years, the increase carries symbolic weight. Frohnmayer did not fail to point this out, calling an unusual press conference yesterday to announce the increased request. "Glad to be able to give some good news," he said.

The National Endowment for the Humanities (NEH) came in at $165 million, up from the $159 million allocated by Congress last year. The NEH proposes to spend $2.5 million of that $6 million increase to expand foreign language study in institutions at all educational levels.

"Before, in my time here, when we wanted to do something new, it meant we had to quit doing something else," said NEH Chairwoman Lynne Cheney. "Now it's immensely rewarding to be able to take over something new like foreign languages and still continue apace with the projects we've had so much luck with in the past."

The request for the National Gallery of Art, which receives federal funding for operational costs, was $48.9 million, an increase of $6.4 million that includes $1.5 million for an exhibit planned to commemorate the quincentenary of Columbus's 1492 voyage.

The proposed budget for the Institute of Museum Services, which supports the operating expenses of museums, zoos and botanical gardens, was $24 million, a $1.3 million increase.

Despite the increases, arts advocates took pains yesterday to point out that because of pay increases and other escalating costs, the budget provides no windfalls.

"It looks highly unusual in the current budget situation, but these increases are for uncontrollable costs, such as utility expense," Smithsonian Secretary Robert McC. Adams said of the $41 million increase.

Despite the increase, Adams said the Smithsonian plans to cancel expanded summer hours unless private funding can be found. "We are looking hard for ways to cut costs," he said.

The most partisan commentators also pointed out that the money does not come close to compensating for years of austerity during the Reagan administration.

"Actually, I'm disappointed," said Rep. Bob Carr (D-Mich.), chairman of the Congressional Arts Caucus. "I had thought we could have received a little more out of this administration. It would take probably $230 million to give constant budget protection from what was cut for the Endowment for the Arts alone."

Bush's "budget message," which serves as a foreword to the budget, states that $757 million has been requested for "activities that preserve, pass on and contribute to the American heritage, $63 million (9 percent) more than enacted in 1990.

"Direct federal expenditures and tax incentives for preserving America's cultural heritage are a relatively small part of the budget," reads the message. "For a variety of reasons of political cultural philosophy, they must remain so. But they should never be viewed as so small that they should be overlooked, nor so insignificant that they might be dismissed.

As Reagan did in the past, Bush is proposing an end to the National Capital Arts and Cultural Affairs fund, which gives grants to major District arts and cultural organizations. The legislative rationale for the fund is that arts fund-raisers find it especially difficult to raise money in the nation's capital. Despite administration attempts to eliminate the fund, Congress last year appropriated $5.4 million for it.

Of the NEA increase, $2 million is slated for arts education, with another $1.4 million going toward administration costs. Frohnmayer said the administration increase will be partly consumed by congressionally mandated pay raises, but will also serve to achieve "broader representation" on the artistic peer panels that select grant recipients. The NEA was assaulted last year for several controversial grants, and Congress created a commission to study the agency's granting procedures.

[From the Washington Post, Mar. 16, 1990]

SMITHSONIAN MAY CLOSE SOME GALLERIES

SECURITY COSTS CITED FOR POSSIBLE ACTION

(By Elizabeth Kastor)

Pressured by rising costs and budget cuts, the Smithsonian Institution is considering closing a "substantial" number of museum galleries as one possible cost-cutting measure, according to Smithsonian officials.

"Right now we're talking more about what might happen rather than what is happening," Smithsonian spokeswoman Madeleine Jacobs said yesterday. "One of the things being considered is closing a certain portion of the galleries if we can't bring our guard levels up to assure the security of the collection and the safety of the visitors."

Jacobs declined to specify how many galleries might be closed, because "we don't like to give out figures when it comes to security."

Smithsonian officials know that the threat of closing gallery space is a powerful political tool, useful for influencing Congress but also dangerous if it appears to reflect a lack of attention to the needs of the public. Emphasizing that "we are a public facility and we care about the public," Jacobs said that no decision about closing galleries has been made, adding, "Right now it's almost like crying wolf when there's nothing to cry wolf about."

But the Smithsonian took a 5.6 percent cut in its fiscal 1990 budget, and National Museum of American History Director Roger Kennedy said yesterday that he was concerned over how the institution will absorb that.

"It seems to me inevitable that portions of the museum will be closed because keeping proper security means you don't thin out your guard force too much," said Kennedy. "The current state of our budget is such that across the board we're going to have to do less—less exhibitions than we should, less research than we should. We will not be able to buy any new materials related to underrepresented people."

Like all federal agencies, the Smithsonian has had to absorb the federal employee pay raise since January, and has also taken a cut under Gramm-Rudman legislation. Like some other tourist attractions in the District, the Institution has also seen a drop in visitors over the last year, leading to a commensurate drop in sales in its restaurants and gift shops. Advertising sales were also down for its magazines.

In addition, the Smithsonian was forced to shoulder a $2.7 million water and sewer bill this year due to a legislative glitch. In the past, funds for such bills were allocated through the District's federal appropriations budget, but fiscal 1990 legislation required federal agencies to pay their own water and sewer bills. Unfortunately for the Smithsonian, its appropriations legislation had already been approved when the change was made, so the Institution was forced to find the money elsewhere.

The water bill shortfall is expected to be only a one-year phenomenon.

Under the suggestions now being considered, the costs of guards would be whittled down through attrition. Museums, which were all forced to cut 5.6 percent, are taking other actions already. The National Museum of Natural History, for example, has left 60 curatorial and research vacancies empty. "If all you talk about is gallery closing, Congress will correctly said, 'Get it from somewhere else,'" said Kennedy, whose museum would be particuarly hard-hit by any closings because many of its galleries are already closed for renovations. "This is part of a much larger problem."

The Smithsonian budget comes up before the House Appropriations Interior subcommittee next month. Some Smithsonian officials would like to see the allocation increased beyond the $308 million requested by the White House, already a 15 percent increase over the 1990 budget, partly to support the creation of an American Indian museum.

But Jacobs said, "We had a very generous budget compared to a lot of other people last year, even with the cuts. I think we want to be very careful laying this back at Congress's doorstep. Of course we always feel we need more funding—how could I say we don't—but I think we're trying to find solutions in our budget without saying to Congress we need more money to do that."

WASHINGTON POST NEWS ARTICLES

Secretary **Adams**. I might point out, Mr. Chairman, it is a customary thing for any museum or gallery to have gallery spaces closed. The Smithsonian always has gallery spaces closed because exhibitions are turning over. A term of art is to have the space dark.

Senator **Reid**. We understand that. But of course the suggestion of these articles is that it is being done because there is a lack of money. We understand that the museum has to have renovations and repairs and changing exhibits.

Secretary **Adams**. That series appeared because of a determined reporter who received an internal memorandum and went after a number of our directors to get some confirmation, and then went to Madeleine Jacobs, our Director of Public Affairs, having received some confirmation. There was no spirit of threat behind the articles.

Senator **Reid**. I accept that.

Senator McClure.

Senator **McClure**. I am reminded, at a much different level, of those who work in local government before coming to the Federal Government who always found that the school that didn't have enough money to satisfy their budget request shut down the football team and marching band first. So you will forgive us for our suspicion as we thought you might be doing the same thing when we saw an article like that.

Incidentally, that is the first issue I addressed in my series of questions, and I will submit those for the record. I would also ask unanimous consent that the letter addressed to the chairman dated November 14, which you have made reference to, be made part of the record.

Senator **Reid**. That will be done.

[The information follows:]

Letter From Robert McC. Adams

November 14, 1989.

Hon. Robert C. Byrd,
Chairman, Subcommittee on Interior and Related Agencies, Committee on Appropriations, U.S. Senate, Washington, DC.

Dear Mr. Chairman: I write to bring to your attention a very serious problem that will significantly affect Smithsonian programs this year—the anticipated requirement for the Smithsonian to pay the District of Columbia for the costs of water and sewer services beginning in January 1990. This requirement is based on proposed changes to the D.C. Public Works Act in the D.C. Appropriations bill.

The Smithsonian requested approximately $3.7 million in its fiscal year 1990 budget to cover the payment for water and sewer services, consistent with the aforementioned proposed change and as the Office of Management and Budget directed. It was OMB's intent to change the method which has in the past provided full funding for these costs directly to the District as part of its Federal appropriation to a method whereby federal users would reimburse the District. Based on the apparent assumption that legislative authority required to implement this change would not be passed (as in prior years) both the House and Senate Subcommittees on Interior and Related Agencies eliminated the requested funding for D.C. water and sewer costs from the Smithsonian's budget request.

However, during action on the D.C. appropriations bill this year, the Senate supported the necessary changes to grant the District appropriate authority to implement this change; subsequently the Conference Committee on the D.C. appropriation bill approved reimbursement to the Treasury by federal users for these water and sewer costs. While the President's veto of the D.C. appropriations bill has temporarily put off the implementation of this change, subsequent enactment of a compromise version of the bill containing this new provision will result in the requirement for the Smithsonian Institution to pay these new charges without benefit of additional funding.

Like other federal agencies, we are also now confronted with the 5.3 percent across-the-board reduction specified under Gramm-Rudman-Hollings and a number of other unfunded costs, the largest of which is the cost-of-living pay raise to become effective in January. With the potential absorption of water and sewer costs, we are facing the equivalent of an 8.8 percent across-the-board reduction in the purchasing power of our operating budget (approximately $20 million). Since we can absorb very little of the GRH reduction and other unfunded costs within cost areas like utilities for controlled museum environments, leased space, and food for animals in the collections, we estimate that Smithsonian programs will actually have to bear a reduction amounting to almost 10 percent. Although there will be every effort to protect public programs, core research, and collections care, including conservation and animal care programs, I foresee the following consequences of a cutback of this magnitude, arising necessarily from employment curtailments and a resulting shortage of funds for supplies, materials, equipment and contract services.

—Inadequate preventive and custodial maintenance on the buildings which house museums, galleries, the zoo and research facilities (some 6 million square feet), many of which already suffer from inadequate care. Such deficiencies serve to exacerbate the problem of the repair backlog.

—Cancellation of extended summer visiting hours normally taken advantage of by almost half a million visitors.

—Suspension of the production of new permanent and temporary exhibits, many of which would replace exhibits that became outdated/obsolete some years ago.

—Closure of exhibition halls and galleries, adding to the number that already remain closed to the public because of inadequate numbers of guards.

—Reduction to public education programs at night and on weekends because of guard and custodial personnel shortages.

—Each of the above impacts, by discouraging visitation would negatively impact revenues generated by museum shop sales and food service, thus having a secondary impact on the Institution's trust budget.

—Deferral of the replacement of laboratory equipment and elimination of field work by the research staff, thus hindering their effectiveness and productivity.

—Avoidance of purchases for the National Collections.

—Slowing of the development of urgently needed first-time and successor information systems for the internal control of financial and collections management.

—The Institution will also have to defer approximately $1.2 million in critical facilities repair projects, thus reversing recent progress in achieving an appropriation level that comes closer to addressing adequately the repair backlog. This backlog exists now as the result of the inability of past appropriation levels to keep pace with the rate of deterioration.

Because of the severe consequences that the equivalent of a 10 percent across-the-board reduction to our purchasing power would have on the full range of the Institution's research, collections, and educational programs, I wanted to alert you to the unique problem of the change in water and sewer expenses, particularly in the context of other budget constraints like GRH. If there is any opportunity to correct this problem while Congress is still considering the D.C. bill, we would very much appreciate any assistance that you can render. Also, we understand the GRH reduction may be partially or completely reversed on a case-by-case basis. We would naturally welcome the opportunity to make a case for an exception to the GRH sequestration before your Subcommittee. In the meantime, please be assured that we are undertaking every effort to develop a spending plan for fiscal year 1990 that ensures the most effective utilization of scarce budgetary resources.

Sincerely,

ROBERT MCC. ADAMS,
Secretary.

IMPACTS OF FISCAL YEAR 1990 ABSORPTIONS

Senator **McClure**. I did note in that letter that you suggested that the summer visiting hours normally are taken advantage of by almost 500,000 visitors. I think you used a figure about slightly more than one-half that.

Secretary **Adams**. I said 265,000, which is a count we made within the last few days.

Senator **McClure**. We should take that figure rather than the one in the letter of November 14?

Secretary **Adams**. The problem, Senator McClure, is that we can count the people who enter the door from 5 o'clock onward, but we cannot tell, given our methods of counting, how many coming in at 4 may have availed themselves of the longer hours. There is some room for slippage between those two numbers.

Senator **McClure**. I understand what you are getting at. Your letter also identified a variety of the consequences of a cutback of this magnitude, and that is a quotation from the letter. Now that we are halfway through the fiscal year, what specific actions have been taken?

Secretary **Adams**. Do you want to speak to that?

Senator **McClure**. Would you like to submit that for the record?

Mr. **Anderson**. We can submit it for the record, sir. But some of the commentary already touched on a variety of approaches around the campus for belt-tightening. The principal one is allowing positions to remain vacant as they become vacant, which is kind of like strangulation in slow motion for the program activity of the Smithsonian.

Senator **McClure**. Can you provide a more detailed accounting of the actions you have taken to respond to that cutback? Because I do believe that we anticipated that you wouldn't have to absorb those utility accounts, and in the rush to closure last fall, the Congress did not take appropriate action and you were confronted with something that we did not anticipate either. But I would like to know what you have done to accommodate to that.

[The information follows:]

Examples of Impacts of Gramm-Rudman-Hollings Cuts and Other Unfunded Costs, Including Water/Sewer and Pay Raise Costs

SI is running a 10 percent vacancy rate this year, compared to an average vacancy rate of 5 to 6 percent (due to normal staff turnover) for the last several years. Roughly half the number of vacancies this year is due to budget reductions and other unfunded costs. At the end of February, the security force had 91 positions that were unfilled due to lack of funds; NMNH had a freeze on 50 vacant positions to stay within budget.

NASM cannot afford the $100,000 cost to shelter its newest acquisition, the SR-71 Blackbird reconnaissance aircraft. (NASM lost almost half a million of its spending power this year to GRH, pay costs, and water/sewer.)

Virtually all museums and the Zoo have reduced their spending on public education programs (including new exhibits, lectures, school programs, concerts) and on routine maintenance and cleaning, which will exacerbate an already staggering backlog of deferred repair projects.

The Folklife Festival will be at a much reduced scale relative to previous years. The Festival is one of the Institution's most visible celebrations of cultural diversity. The Festival cannot sustain continued reductions and also sustain a vital program that fulfills our public responsibilities to minorities and other ethnic communities.

All research bureaus are deferring purchases of replacement scientific equipment. Noncompetitive salaries already hinder recruitment/retention; outmoded equipment will exacerbate these difficults.

INFRASTRUCTURE NEEDS

Senator McClure. The fiscal year 1991 justification identifies $67 million in annual infrastructure needs for the Smithsonian and salaries and expenses of this amount. You asked for $7.5 million for fiscal year 1991 to get started on this program. Most of the items identified are high priority needs, including health and safety requirements, as well as security arrangements. I would note, however, that some items don't appear to be infrastructure needs, but in fact are upgrades of existing equipment. For example, of the $7.5 million requested in fiscal year 1991, $4.4 million is to continue the construction of the submillimeter telescope array and conversion of multiple-mirror telescope. How do you define infrastructure in this analysis?

MAJOR SCIENTIFIC INSTRUMENTATION

Secretary Adams. I think, Senator McClure, obviously there can be a variety of definitions. And this may not fall within yours, but from our perspective we have in the Smithsonian Astrophysical Observatory one of the primary facilities for research in this field in the world. And if one is to maintain a facility like that, you need to plan well in advance to have on hand the material that will keep its staff in place and keep them together as much as a decade before they are going to exhaust the sources that they currently have.

That telescope—the reason that the OMB agreed to put the submillimeter array in the budget at all was that they saw the need for the orderly development of the facilities that would maintain a staff and laboratory as well. And I think when you are dealing with something like astrophysics, where major instrumentation is like blood, so to speak, you can make a case for calling it infrastructure. I can see that you might also feel that that is strictly an upgrade that has to be taken on its own merits.

Senator McClure. Well, it doesn't sound to me like it is of the nature that I would ordinarily call an infrastructural need, and that is the reason that I asked the question so that we can understand your budget submission. I don't know that there are any direct analogies that come to mind or that are even needed, but it struck me that those are not infrastructures in any term that we would understand.

Mr. Anderson. I think, Senator, from the point of view of a local community the sewer system clearly is infrastructure because it is necessary to process daily activity if you will. From the point of view of a scientific community, having the tools necessary to conduct science is as essential.

Senator McClure. It seems to me we will get a better meeting of the minds if you try to figure out how we think.

Secretary Adams. I think you are right. The point is well taken.

FISCAL YEAR 1991 INFRASTRUCTURE NEEDS

Senator McClure. I guarantee you I didn't think that way before you came here, and I'm not sure I will after you leave. How do you determine which infrastructure needs to fund in fiscal year 1991 and which to defer?

Secretary Adams. Mr. Anderson can answer that.

Mr. Anderson. In part, Senator McClure, this was a decision suggested for us by OMB in their detailed review of our budget request of the administration.

Also, to be fair, I think they based their reaction on the vigorousness with which we justified portions of that OMB request.

It was their suggestion, for example, that the Office of the Inspector General be included for a specific budgetary increase. It was certainly their interest, along with ours, twinned, if you will, with regard to the astrophysical observatory equipment that the Secretary just referred to. It is a clear need to everybody inside the Smithsonian and at OMB that we have to get on with our information and financial management systems. This is computers, this is accounting systems. OMB was sympathetic. That is the next largest slug of dollars, if you will, in the request under infrastructure.

As to other aspects, exhibition reinstallation is an infrastructure item if the business at hand is a museum, for example. There are 900,000 dollars' worth of infrastructure of that sort, most particularly at our Museum of Natural History, in this dollar total of $7.5 million that you referred to.

Senator McClure. I was looking at the table as shown on page 2 of your justification and it has a list of requests of increases in the fiscal 1991 budget in the unfunded requirements backlog. And I noticed that you've requested in the budget something less than $7.5 million. I was just wondering how you assigned priorities between the several items that were listed in that table.

Mr. Anderson. In part by following OMB's guidance. In part by trying to tackle first those things that seemed to us to undergird most of what remained.

If, for example, you don't have a good computer system underpinning your management information systems, you can't do research, you can't do accounting, you can't do billing. There are many activities that are directly affected by that. Consequently, there is a reasonable sum of money here—not nearly as much as we had requested, but over $1 million—for our information resources activities.

Secretary Adams. There are categories, Mr. McClure—I mentioned one that is quite large, facilities maintenance deficiencies—where one can apply sliding scales to let this roof go for so many years; you can squeeze another year out of it.

Senator McClure. We hope.

Secretary Adams. We hope. And I think many of the decisions are of that character—in light of the fact that there obviously is a budgetary limitation.

REPAIR AND RESTORATION BACKLOG

Senator McClure. Let me shift for a moment from salaries and expenses to repair and restoration. In response to a question during the fiscal year 1989 hearing, the Institution indicated that backlog of maintenance for repair was $197 million. An additional $20 million was provided in fiscal year 1989.

Unfortunately, the fiscal year 1990 justification indicated a backlog of still $197 million even after the $20 million was provided. The Smithsonian indicated that the facilities inspection program revealed additional items to add to the backlog as well as some changes to the previously estimated cost of items. An additional $26 million was provided in fiscal year 1990 to address this backlog.

Unfortunately, the fiscal year 1991 justification indicates the backlog has risen to $229 million. The Smithsonian indicates that further inspection has uncovered additional requirements of more extensive damage and deterioration. More detailed studies have also recommended higher cost estimates.

I'm extremely frustrated with this situation. Perhaps you are, too. If my math is right, we have provided the Smithsonian with $46 million to address a $197 million problem, but the problem has grown to $229 million. Why is the Smithsonian having such a hard time understanding its own needs?

Secretary ADAMS. Well, I think we are talking about a moving target. These are buildings that, in fact, do continue to deteriorate. It isn't something that can be corrected on a one-time basis. Those problems are going to remain.

I think perhaps we ought to ask Mr. Richard Siegle, who is in charge of our facilities, to come up.

Mr. SIEGLE. Senator McClure, the backlog of essential maintenance—the definition of that is the unfunded backlog at the time the inspection is done, what items need to be done at that point in time that you don't have money to do.

So, if you make that inspection this year, which the $229 million reflects, that would not take into consideration a roof which becomes eligible for replacement or needs to be replaced in 1992 or a chiller that needs to be replaced in 1993. In other words, the backlog is those things which should have been done at that time but you don't have money to do. Then each year there is new, there are other things that come up, things that need to be replaced. Equipment has a certain life and roofs have certain lives and so forth. So, we are indeed adding to the backlog each year with more projects, not because of lack of inspection or something like that.

Senator MCCLURE. In the 1989 budget request, did you have details that added up the $197 million?

Mr. SIEGLE. Yes.

Senator MCCLURE. In next year's fiscal budget request, you indicated $197 million, precisely the same number. Do you have the same level of detail that reflected that $197 million?

Mr. SIEGLE. We have the backlog and report of inspections of each building.

Senator MCCLURE. Maybe it was unfair, but I was struck by the fact that the figure remained identical even though we provided $20 million. I wondered if you have a list or used the old figure again.

Mr. SIEGLE. No; we have a list.

Senator MCCLURE. It came out to the penny?

Mr. SIEGLE. Well I think it was the closest million.

Senator McClure. I have seen that pattern before, and I don't mean to be pejorative, but I was just struck by the coincidence of the figure.

Secretary Adams. Senator McClure, our regents have requested firmly that we do prepare such a detailed list, so it is available.

Senator McClure. Could you provide that for the committee, the detail of the backlog for the last 3 fiscal years?

Mr. Siegle. Right.

[Clerk's note.—The submitted material is being retained in the subcommittee files.]

R&R FUNDING REQUIREMENTS

Secretary Adams. I think there is a more general problem here that I might mention. We went along for many years with a frankly inadequate amount of money appropriated for this purpose. In the meantime, we were continually adding buildings over the years. So the base was going up, and it wasn't really attended to—and didn't need to be for some years because, obviously, new buildings take a while before they need those repairs. We are attempting now to establish an amount which probably will then have to stay relatively constant.

Senator McClure. I don't question the need. I question the background, the basis for the estimate of need. Because I think we do tend to ignore the depreciation of capital accounts. I think one of the greatest deficiencies in financial management can be in exactly that area. Do you have a 5-year plan that identifies the needs for repairs?

Secretary Adams. Yes.

Senator McClure. You just happen to have it?

Mr. Anderson. Just happen to have a document called "Choosing the Future."

Senator McClure. Could you provide a copy to the committee?

Mr. Anderson. Indeed.

Senator McClure. Thank you. How does the $229 million backlog relate to the $67 million infrastructure needs identified in the S&E account?

Secretary Adams. Mrs. Suttenfield can address that.

Ms. Suttenfield. The $200 million-plus backlog relates solely to the bricks and mortar type of infrastructure, whereas the $60 million plus that we show as the backlog in S&E are programmatic and operational backlogs. This is described on page 2.

Senator McClure. Maybe you really didn't mean to be so careful in confining it to bricks and mortar. Is it more than just bricks and mortar? I don't mean to pin you down, but isn't it a broader need than just bricks and mortar?

Ms. Suttenfield. Yes; that is exactly why we portrayed the unfunded requirement in the S&E account.

Senator McClure. But is it all just building and structural maintenance?

Ms. Suttenfield. Yes.

Mr. Anderson. Yes.

Mr. Siegle. It is also building systems, electrical, asbestos removal, et cetera.

GREENHOUSE GASES AND TROPICAL FORESTS

Senator **McClure**. Mr. Chairman, just a couple of other questions and then I will submit the balance for the record.

I want to turn a minute to greenhouse gases and tropical forests, because it cuts across a variety of different issues that we are dealing with.

The Smithsonian scientists began the first-ever studies on how carbon dioxide affects tropical plants. These studies include raising common tropical species at normal and twice-normal concentrations of carbon dioxide. This research suggests that intact tropical forests can help reduce the rate at which atmospheric carbon dioxide increases over the next decade.

The next stage of this work will involve studying the effects of carbon dioxide in the upper forest canopy. The justification indicates that this is where most growth and photosynthesis occurs.

Has the research compared intact tropical forests to old growth forests?

Secretary **Adams**. Let me ask Mr. Robert Hoffmann, who is Assistant Secretary for Research, to address that.

Mr. **Hoffmann**. This research, Senator McClure, is being carried out at two sites. One is the Smithsonian Tropical Research Institute in Panama, on Barro Colorado Island and on plots on the mainland in the——

Senator **Reid**. What are they?

Mr. **Hoffmann**. Barro Colorado Island and Soberania National Park, which is on the mainland. The second site is at our Environmental Research Center at Edgewater, MD, on the Chesapeake Bay.

This is a cooperative project among scientists of these two bureaus and the Smithsonian. The initial work was pioneered in Edgewater on the Chesapeake Bay, utilizing low-growing grass species because it was easier to manipulate those.

Having perfected the techniques there, we then transferred the work to old growth forests at Chesapeake Bay in order to be able to transfer the technology working with trees, and we are now at the point of having developed means of working with trees and taking it down to tropical forests and to other kinds of vegetation, low-growing, herbaceaous, as well as trees, and repeating the work there in the tropics.

Senator **McClure**. Well, I would like to give you just a little bit of background for the question, because there is a great deal of concern about the growing scientific evidence of global warming and both the role that carbon dioxide plays in the atmosphere in that phenomenon and what human activity may do.

I just noticed that one of the natural environmental organizations that have been very concerned about global warming also says planting 1 billion trees almost has nothing to do with it and they criticized the President's quota, which I guess is par for the course in politics. But I wonder how can it be, if indeed we are concerned about cutting old trees on one site, that planting 1 billion new ones has nothing to do with the problem.

Mr. **Hoffmann**. I would say that a flat assertion that planting 1 billion trees has nothing to do with it or would have no effect is certainly premature. We certainly do know that trees take up a large amount of carbon dioxide, and the question is what effect this would have on the magnitude of the problem.

One of the things we are discovering is that, as the carbon dioxide levels in the atmosphere of these experimental plots are increased, the rate at which carbon dioxide is taken up by the plants increases at a more rapid rate. And we don't yet know whether this is something that will occur in all kinds of plants, under all kind of conditions, or whether other plants will show a reverse effect. There is a lot we need to know. But there is some indication that, as carbon dioxide levels increase, plants will become more effective in tending to damp the rate of increase.

Senator McClure. That has to do with carbon dioxide concentrations and not the degree of maturity of the tree?

Mr. Hoffmann. That's right. The degree of maturity of the tree affects the rapidity with which it grows. Generally speaking, the more mature a tree the slower it grows in the sense of adding new material. But at the upper level in the canopy, the daily turnover of carbon dioxide in these leaves may tend to be quite high.

Senator McClure. If I understand correctly, the phenomenon that follows is that the tree takes up the carbon dioxide and fixes the carbon in the tissues in the tree. As long as that tissue remains the same, the carbon is stored.

Mr. Hoffmann. It is stored.

Senator McClure. When the tree is destroyed, it depends on what happens to that tissue. If it is put into buildings, that carbon is removed from the atmosphere. If the tree is burned, it goes back into the atmosphere.

Mr. Hoffmann. If the tree dies and falls and decays, the carbon dioxide goes in the atmosphere, but at a much slower rate. Burning is the big problem.

Senator McClure. So, it depends on what happens to that mature tree. But it is also my understanding that, as the tree matures, the rate of uptake of carbon dioxide decreases.

Mr. Hoffmann. It tends to decrease.

Senator McClure. So, a mature forest probably removes less carbon dioxide from the atmosphere than one that is rapidly growing.

Mr. Hoffmann. Yes; but, on the other hand, that matured forest is storing much more carbon dioxide.

Senator McClure. It depends on what happens to the tree after it is no longer standing and growing. That is the point I was trying to make. And that is why I asked the question with respect to the intact tropical forest or old growth forest. Let's draw a parallel or an analogy and see if it is correct.

If you take an old growth forest and harvest the forest of healthy trees and the trees are then used in wood products, then that carbon is stored in the new structure in the portion of the tree that has not been rotted or burned. On the other hand, if you do replant a new forest or allow a new forest to grow adequately, it will remove more CO_2 from the Earth than the same acreage of mature forest would.

Mr. Hoffmann. I presume, although I never studied the problem myself.

Senator McCLURE. The other side of that would be, if in much of the area in Brazil, for example, the old forest is cut, and a new forest is not replanted or allowed to regenerate but cleared for agricultural purposes, then whatever portion of that forest is burned or rots, that carbon goes back in the atmosphere and there is no new forest there to remove it. And the tree is a more efficient form of fixing the carbon in the atmosphere than an alternative problem.

Secretary ADAMS. I think there is a special problem in the tropical areas in that most of the nutrients are stored in the living forest and there is very little in the soil itself, and that leads to very rapid runoff and destruction when the forest is burned.

Senator McCLURE. I think there is no question of the concern that we have for old growth forest as well as all the other parts of that ecosystem when the forest is removed and not regenerated.

Mr. HOFFMANN. A third factor we are studying in Panama is the effect of forest removal on the regional climate, the local regional climate. And we have found through long-term monitoring that rainfall has declined 20 percent in this region, which tracks very closely to the rate of forest removal.

Now, we are not yet at the point of being able to demonstrate a causal relationship, although there have been some very interesting studies in Brazil which suggest precisely this: that as forest coverage is removed, it results in rainfall reduction.

Senator McCLURE. Now I know why they have so little rainfall in Nevada. They don't have any trees.

Mr. HOFFMANN. There are a few other factors.

Senator McCLURE. Mr. Chairman, I will submit the balance of my questions for a response in the record.

Senator REID. Senator Domenici.

THE SMITHSONIAN AND MUSEUM ACTIVITIES ACROSS AMERICA

Senator DOMENICI. Mr. Chairman, let me first ask a few very general questions with reference to the Smithsonian and the National Government's or country's policies, and then I would like to spend some time on the activities of the Smithsonian with reference to minorities in the country, which I understand you are quite familiar with in that the House inquired rather extensively regarding it.

First, it appears to me that, while the Smithsonian is clearly one of our flagships, the activities that are part of the broad category of museums in the United States are growing rapidly across America. Is that a true statement?

Secretary ADAMS. I think that is unquestionable, yes.

Senator DOMENICI. As a matter of fact, if you look at the Smithsonian's activities over a decade, museum-type activity across America is growing much more rapidly than the growth in the Smithsonian; exponentially, and not just a couple of times over.

Secretary ADAMS. Yes.

Senator DOMENICI. Now, do you at any time—if there was a time, it would seem like it would be now, take a look at the overall goal of the Smithsonian in a changing America?

Secretary **Adams**. I think we have had many discussions of it. And if you ask whether we have prepared sort of a long-term vision that looks out several decades or more, we haven't done so. I could certainly prepare one. I have previously touched on this.

THE ROLE OF MUSEUMS IN AMERICAN EDUCATION

Senator **Domenici**. Let me tell you why I ask the question. There are very few issues in the United States that have attracted attention as much as education, and unfortunately the deficiency in America's education system. We saw historic events, including a summit with the Nation's Governors, to develop a set of American goals with reference to education.

We have seen a huge deficiency in educating our children, generally speaking, but a serious deficiency with reference to science, math, and physics. An incredible American goal has been set for 10 years from now that by the year 2000, U.S. students will be first in the world in math and science achievement, to name just one.

I wonder if it is not incumbent upon an institution with as much prowess and visibility as yours to address that issue, and instead of coming here—and I'm not critical of your efforts—as a flagship you might look out across America and you might say, "Gee, would it be nice if we weren't run by the United States of America." I wouldn't be angry at you if you said that from time to time, because I believe there are some major American museums that are not run by the U.S. Government who have much more flexibility than the Smithsonian. They are probably building many more modern facilities at a much more rapid pace because they are doing everything in a modern way. You are still doing things the U.S. Government way, and those are very often inconsistent.

So, I wouldn't be upset if you were thinking that. But it does seem to me that from time to time it would be rather exciting if an institution of your quality would come before us and, instead of building on the past, say, "We are joining the mission in education, science, math, and physics, and we are going to have a special emphasis for the next decade not only in Washington but as a national mentor." Let me mention a number I've just heard, and you tell me if I am right. There are less than 150 so-called science museums in the United States, like the one in San Francisco, that are geared to educating children, and are dynamic and moving. Less than 150, I believe, of a major size, out of 5,500 museums, more or less. And yet 50 percent of the attendance in American museums is at the science museums. You might check the numbers of museums. If I am way off I apologize. I do know that the 50-percent attendance figure is right, though I may be off on the total number of museums.

I think that speaks to something. I just throw this out as a Senator concerned about moving and changing with times and coordinating activities as something that would excite me. The Smithsonian has missions you may reluctantly take on, and you may have some before you right now that you would not have prioritized, but we have prioritized for you. So that is my first point, and if you want to comment, fine. I would like to go over two other issues and I will try to be brief.

SMITHSONIAN ACTIVITIES IN NATIONAL EDUCATION

Secretary **Adams**. I agree with you completely. The fact is, however, that we have ourselves recognized that we have a major contribution to make in this area, and together with the National Academy of Sciences we have begun. And we house in our own buildings the National Science Resources Center that is devoted to precisely that subject. And I go around the country giving a number of talks about the crisis in the science and math education in this country. So it is an issue which I am personally very familiar and I have worked hard on.

I think museums have a responsibility which is not simply parallel with that of the schools but comes at the question of science education in a different way. They offer a form of alternative on the whole more often dealing with family groups rather than with cadres that are all at one grade level, let's say, although we get school groups as well. We are very much involved in that effort.

We have an exhibit opening in 6 weeks, a permanent addition to the National Museum of American History, which seeks to place in perspective for the country the meaning of the information age. It is an exhibit where we think millions of Americans over the years are going to have an opportunity to see and themselves work with material that is absolutely fundamental for our own competitiveness in the world and the advancement of the fundamentals of our own science and math education.

So, in that respect we are, I think, ahead of the curve and intend to stay there.

Let me touch briefly on the question of how we stand in relation to our sister museums in the private sector.

I think we have a different kind of responsibility that often will see us moving more slowly. I think you are right in your suspicion that in the private sector they can innovate more quickly, they can take more risks than we feel we can take. There are many things that work, frankly, better in the private sector.

On the other hand, take two examples that are very much before us at the moment. I think they point to a direction for the Smithsonian in the future that is consistent with the question that you are asking. Take first the Indian museum.

NATIONAL MUSEUM OF THE AMERICAN INDIAN

The specification in the legislation—and it is one that I personally welcome—is that we will work with, we will help train, we will provide guidance and advice for and exhibits, for Indian museums yet to be created in reservations and in pueblos across the country. It seems to me that that kind of transfer of expertise, and training function, and the loaning out of materials in our collection in order to make these real museums, is something that only a Federal institution is really likely to do well. And I think that is a function that we, therefore, will be expected to continue with.

AFRICAN-AMERICAN PROGRAMMING

The other comparable area that I mentioned has to do with our African-American responsibilities. There is an African-American museum association with about 100 museums; many of them small, many of them in perilous financial circumstances. As we plan for whatever should be done on The Mall in Washington, we need to consider this existing network of activity. We need to work with and respect the needs of those institutions. And again I think we can visualize a kind of networking where we and our resources can be effective, not by managing, not by taking over, but by offering training opportunities and loan of exhibit materials and so on that will strengthen that network.

So I think there are fields like this where we do have a contribution to make that is distinctive.

CONSERVATION RESEARCH

The final one that I might mention still more briefly is we have a very strong conservation analytical facility which I think can be on the cutting edge of research in conservation, producing new findings, new techniques, that will be valuable across the country. I completely agree with the general thrust of your question, and we certainly have given that a lot of thought.

ROLE OF NATIONAL MUSEUM OF THE AMERICAN INDIAN

Senator DOMENICI. I thank you for the answer. I believe, Mr. Chairman, that there is a vital role that the new National Museum of the American Indian will furnish that the Smithsonian ought to consider inherently in a lot of areas. When you put together a new museum and you look at Indian America and you say, "Let's help train young Indian people in this mission as part of this undertaking," I think that is exciting, and I compliment you for it.

SMITHSONIAN QUINCENTENARY PROGRAM

There is a project within the Christopher Columbus quincentenary activity that is going to focus on the blending of three cultures in New Mexico. Perhaps you are aware of the project called American Encounters.

What is very frustrating, and I'm sorry my friend from Texas isn't here, is that you have named a Texan to run it. I really don't understand why you could not have found a New Mexican from one of our universities to head this exciting project. We have some fantastic experts that would be more in tune with giving you the straight scoop on the blending of our cultures. Perhaps the Texan, whom I do not know, will go beyond what most Texans think about New Mexico's three cultures, and he will do a good job.

Having said that, let me ask a couple of questions and give you my own observations, Mr. Secretary.

MINORITY HIRING AT THE SMITHSONIAN

With reference to minority hiring within the Smithsonian, I am not a wild man; I know that you will not hire minorities unless you seriously look for them. Let me tell you, I'm convinced that we have established a process, all of us, that the first time through in looking for people to hire for various jobs, we essentially have a good old boy network in America. It is looking to a certain school that has been furnishing a certain type of graduate all the time, that is part of the network. You will not find qualified Hispanics or blacks using that process. There has to be a commitment to go back again and say, "Look, we always get graduates from those places, but can't we look again." And I urge that you do that. I'm not looking for a quota system. I'm not looking for mandatory affirmative action. But I believe that you are going to catch a lot more hell than you have this year if you don't show some progress in this area.

FISCAL YEAR 1991 BUDGET REQUEST

Now, having said that, let me give you my own version. You may be in bad shape in terms of catching up with past needs, and we ought to seriously consider how we can help you catch up. But I don't believe you can expect more than a 15-percent increase, which is what is in the budget this year, during these times.

It is confusing because part of the needs are capital, and part are operational. That is not any way to budget, but, if I read it right, you are going up 15 percent this year. I don't think you can expect 30 percent. You might get one chunk here and there to help you catch up, but 15 percent is a pretty good increase. In fact, very few agencies and departments are going up 15 percent.

SMITHSONIAN TRUST FUND RESOURCES

Having said that, I looked at your ancillary funding, called your trust fund activity. I don't know much about it, but I am impressed that you have gone up in your estimates $48 million this year. You were at $200 million last year. Where are we this year? We're at $248 million. You are up $48 million.

[CLERK'S NOTE.—See additional committee questions (question No. 141) for clarification of figures.]

Senator **DOMENICI**. I don't know what the limitations on using that funding are, but that is not Government money in the sense of appropriations. There may be some Government money for contracts, but it is outside money that goes into that fund.

Could you—not now because it takes too long—but could you provide for the record how that fund is limited, why we can only use so much of it, generally where it comes from, and do you have any notions on how it might be better utilized than it is currently structured? I have nothing else if you want to comment on that.

Secretary **ADAMS**. The trust funds of the Institution are at the moment in a situation of more desperate shortage than the Federal funding. And we might want to have our treasurer, Ann Leven, speak to that. She is here. Of course there are problems of restrictions on some of that. Some of it is grant money and many other things. But I think the general situation might be better described by our treasurer.

Ms. **LEVEN**. Our primary sources of trust funds are endowment income, of which approximately 50 percent is restricted funds, meaning that the donors have provided restrictions as to how the income as well as the principal can be used.

The second source is from magazine and membership activities. Those are general, unrestricted funds for the Institution. Another major source is from our shops, mail order, merchandise activities, both on The Mall and off The Mall. There again these are unrestricted funds. We also have some limited fundraising capabilities which we are enhancing at this present moment. We have not been the beneficiary as many of the private institutions that you talked about, sir, of public largess. Our public has the view that the Congress provides most of our funding.

If you break down operating income, we receive 70 percent of our operating fund from the Federal Government and 23 percent from the private sector from the sources I have listed. Seven percent additional comes from Government grants and contracts for specific research work; most of that goes to our Smithsonian Astrophysical Laboratory in Cambridge, MA.

On the expense side, a major portion of what we do with our funds are what we call the Collections Acquisition, Scholarly Studies, and Educational Outreach Program expenditures: acquisitions, fellowships, special exhibitions, research, scholarly studies, and educational outreach. The issues of public outreach in terms of science education as well as minority education and minority outreach are handled out of those funds, administered by the various assistant secretaries.

The remaining funds go to support staff that we cannot hire on Federal funds—in some cases researchers for whom the Government salary scales are inadequate. It is necessary to include, as well as some administrative staff. So these are, if you will, the pluses and minuses on both sides of the trust fund ledger.

Mr. ANDERSON. I think we would be remiss not to point out that that $48 million increase is comprised predominantly of the cost of goods sold.

Senator DOMENICI. What?

Secretary ADAMS. The cost of goods sold. In other words, our total income did go up by that amount. Most of that required immediate expenditures to restock inventories of items to be sold next year. So only the profit margin if you will--although that is not exactly the precise term because we are not for profit organization—represents expendable cash.

FEDERAL PROGRAMS IN GREENHOUSE RESEARCH

Senator DOMENICI. Let me make one last comment to the research director. It is amazing how much the Federal Government is doing on research into the greenhouse effect that nobody knows anything about. Last year some were speaking about the Federal Government not doing anything in greenhouse effect research, and that is because they looked at only one agency they assumed was doing greenhouse research. We had somebody take a look, and there were six agencies of the Federal Government doing major research—you weren't even listed, incidentally—and it was $190 million at that point. This year it has gone way above that.

It seems to me we ought to guard against a real duplication of effort with the Federal Government spending money on this research. With the enormous increase in spending proposed for various agencies, everything from Interior NOAA, the Department of Energy, NASA, the National Science Foundation, and EPA that somewhere you may find some contractual arrangements that would assist you in your research.

Mr. **Hoffmann**. We sit on the intergovernmental Committee on Earth Sciences, so we are quite aware of what is going on in the other agencies. And they are aware of our research. We spend, compared to these other agencies, a very small amount, about $3 million, not restricted to global warming but global change problems overall. So we are quite aware of that. And, in fact, we do work cooperatively with certain agencies.

Senator **Domenici**. Thank you, Mr. Chairman.

Senator **Reid**. You are welcome.

STUDY ON WEST VIRGINIA FACILITY

Mr. Adams, in last year's justification you identified a need for an off-Mall facility for collection storage. During last year's hearing, we discussed the possibility of locating a collection storage facility outside of the high-cost metropolitan area of Washington, DC. One of the possibilities you were going to explore and report back to the subcommittee was in regard to the location of a storage facility in West Virginia. Have you completed your study?

Mr. **Anderson**. There is a letter that was addressed recently to Senator Byrd speaking to this matter. Let me see if I have a copy of it handy. Perhaps your staff also has a copy.

Here it is. Here is a copy that I can supply, Mr. Chairman.

Senator **Reid**. I have it. I have not received it until a couple days ago. We will make this letter part of the record.

[The information follows:]

Letter From Robert McC. Adams

March 15, 1990.

Hon. Robert C. Byrd,
Chairman, Subcommittee on Interior, Committee on Appropriations, U.S. Senate, Washington, DC.

Dear Mr. Chairman: This is a follow-up to our letter of December 1, 1989, which outlined a possible option for the establishment of a Smithsonian facility in West Virginia. Although implied in that letter, we were not as explicit as we should have been in commenting on the establishment of a collection storage facility. Collection storage needs are met presently in our museum and gallery buildings with off-Mall storage centered at the Museum Support Center and Garber Facility in nearby Suitland, Maryland. Over $50 million have been spent on developing these facilities. Future development of this central site is planned. Access by Smithsonian curatorial and other staff and by visiting scholars is quick and convenient. Such would not be the case at a more distant location.

As reported in our December letter, a more appropriate candidate might be a warehouse and fulfillment center. To develop this idea we commissioned a study to examine the feasibility of relocating Smithsonian Mail Order and other Institutional fulfillment activities. A draft report has just been received. The Smithsonian's Treasurer will be meeting within the next few days with the Business Management staff to review the draft and to ascertain answers to obvious omissions in the data received to date.

A preliminary review of the document, however, supports the conclusion that at some future point we should relocate our current fulfillment activities. Several West Virginia sites appear viable as potential areas for relocation, assuming accessibility to a United Parcel Depot and Federal Express Service. Our consultant is researching this point right now as 90 percent of our "out" packages go via these carriers in keeping with customer preference.

The study is the first step in a detailed evaluation process that must be followed before any final decision is made. The mail order business is complex. We have learned that other mail order organizations have taken as long as three years to assure a smooth transition.

Significant dollars (approximately $300,000) will need to be allocated to perform this next level of evaluation. For example, careful analysis of renting versus purchasing our own building, new construction versus existing, etc., will have to be completed. Such issues have obvious site implications. Next we will need to determine equipment needs as mail order is highly mechanized. Finally, detailed construction, equipment and manpower budgets will need to be prepared. These budgets must be set against possible funding sources as currently all income earned by our mail order units goes directly into operating funds. Financing may be necessary.

We will proceed with all due diligence in examining the issues. We recognize the important implications of such a change and need to assure that careful attention is paid to each step in the evaluation. Our current lease, in Springfield, VA., expires in 1995. We are working against that date or sooner if possible.

Sincerely,

ROBERT McC. ADAMS,
Secretary.

Secretary ADAMS. Thank you, sir.

Senator REID. The question that I have, Mr. Secretary, is why did we just get this letter?

Secretary ADAMS. I am afraid I can't answer that.

Senator REID. This took place 1 year ago. Why did we just receive this letter?

Secretary ADAMS. Mr. Jameson, can you speak to that?

Mr. JAMESON. A large part is that the study we told you we were starting in our December 1989 letter has just been received in draft form and is being reviewed by our treasurer.

Senator REID. Well, I appreciate that. But, of course, that wouldn't have prevented you from answering the letter and reporting to the subcommittee prior to that. You could have given us a pretty decent response without that, right?

Secretary ADAMS. I think it is fairly plain that the impending hearing brought this to the top of the list.

Senator REID. That was my comment. On December 1, Chairman Byrd received a letter from Mr. Anderson notifying us that a warehouse and fulfillment center could be an appropriate candidate for a facility in West Virginia. The center would be responsible for processing mail orders for products available for sale from the Institution. Your letter indicated the matter was to be referred to a consultant for further evaluation and we could expect the results of this study in February 1990. This letter we just talked about covers part of that.

Secretary ADAMS. That's correct.

Senator REID. What should I tell the chairman about the status of the study and its expected conclusion? And when can we expect a formal transmittal of results?

Ms. LEVEN. The study is in my hand. It is on a preliminary basis because there are several very key determinants as to when and whether we can move.

A mail order operation requires a large warehouse facility. It requires unskilled labor for the most part but a high degree of mechanization. It also requires most particularly availability of United Parcel and Federal Express service. The consultant that we hired was able to provide us with a great deal of information except that he omitted the issues of Federal Express and United Parcel. We have now gone back to him to get a general appraisal of these issues. It would appear that one town in particular satisfies this need but does not satisfy other needs.

What will be necessary in this case, having done a preliminary study, is to do further work as alluded to in the letter that you just received, work which will be at a cost of about $300,000. The $300,000 will have to be made available out of our operating budget, and, as Mr. Anderson has already noted, that budget is severely taxed this year.

The leases on the space that we currently occupy for the mail order operation do not expire until 1995. We anticipate it will be somewhere between 2 and 3 years, based on our discussions with other major mail order houses, before we could make an actual move. It will be necessary to do a much more detailed study than we have done. What we were able to do under the current study is find five cities that looked as if they might be potential candidates for a warehouse operation that could possibly meet our needs. These are five cities in West Virginia.

Senator REID. I am speaking for myself and not for the chairman, but it would seem to me that that would be money well spent probably.

Ms. LEVEN. It would be a tradeoff between program money within the Institution. That would have to be a judgment if you think that is how we should spend our private funds, sir.

ADDITIONAL COMMITTEE QUESTIONS

Senator REID. That is a decision you have to make. Thank you for your testimony. We have a lot of other questions and we are going to submit them to you in writing. We apologize for the court reporter not being here on time, but it put us about one-half hour behind what we anticipated. If you could prepare responses to these questions in the next 3 weeks, that would be appreciated. Again we appreciate very much your time and effort in preparing for this hearing, and we know during these times of budget constraints some of the programs that a lot of us feel very strongly about are getting pushed further and further back and this is of course a concern. We are proud of the reputation the Smithsonian has and are hopefully working together to maintain and build upon that.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Reduced Budgets

Question 1: Secretary Adams, according to staff discussions and recent newspaper articles, it appears the Smithsonian Institution is having funding difficulties or priority-setting problems. Last Friday's Washington Post article advised us that the Smithsonian is considering closing a "substantial" number of museum galleries due to lack of funds for security guards. The article stated that the lack of funds was attributable to a 5.6 percent cut in your FY 1990 budget request, including an unanticipated $2.7 million water and sewer bill.

Mr. Adams, the Smithsonian Institution received appropriations of $245,935,000 in FY 1989 and $266,690,000 in FY 1990. That is an increase of $20,755,000 (or 8 percent). There are many, many federal agencies that are having to deal with reduced budgets or are having to absorb higher costs. As a result, agencies are shifting priorities and taking efficiency measures in order to best serve public needs.

In another Washington Post article (dated January 30) which was published shortly after your FY 1991 budget was sent to Congress, you were quoted with regard to the Smithsonian's $41 million increase over last year's appropriation. I will read from the Post's article, '"It looks highly unusual in the current budget situation, but these increases are for uncontrollable costs, such as utility expense," Smithsonian Secretary Robert McC. Adams said of the $41 million increase.' The article goes on to say that the Smithsonian is planning to cancel expanded summer hours unless private funding can be found.

Were you trying to imply that the Smithsonian's doors would be closed in the evenings because of escalating or unanticipated utility costs?

Answer: Utility costs are a significant part of the overall funding problem. For FY 1990 our appropriation was almost $800,000 less than our request for utilities and communications. Presently, we are projecting a deficit of approximately this amount which when coupled with unfunded pay, water and sewer costs and GRH absorptions makes it impossible to reprogram funds within Administration and Facilities Services to maintain a normal level of guards.

Question 2: Mr. Adams, in fact, only 27%, or $11,157,000, of the $41,000,000 is attributable to what you term "uncontrollable costs." The remainder of the increase ($29,843,000) is requested for program increases (such as the global change initiative, the American Indian Museum, the submillimeter and multiple mirror telescopes, and so forth).

Attention-getting rockets are being fired. However, we are confused as to what your current situation is and what your current action plan is. Are your proposing to close galleries, cancel evening hours or both? Specifically, what is going to happen for the remainder of this fiscal year?

Answer: On the assumption that funds will be located elsewhere in the Institution, the Office of Protection has been authorized to make use of overtime and to hire 65 permanent and temporary guards to help restore daytime coverage in and accessibility to exhibit halls and galleries. It is expected that these corrective actions will be in place during Easter Week and during the period of June to Labor Day, both periods of heavy visitation. Such actions will cost an estimated $410,000. It is not likely that a further $525,000 can be reprogrammed to allow visiting hours to be extended into the evenings in the summer months.

Question 3: How does your FY 1991 budget propose to solve this dilemma?

Answer: The problem will repeat itself again in 1991 since the cause of the problem is a structural deficit totaling approximately $1 million in the Office of Protection Services which has not been funded. This year, in addition to a previously identified structural deficit of $455,000, the permanent budget reduction required by Gramm-Rudman-Hollings ($318,000) and absorption of additional security costs at the Tropical Research Institute ($150,000) have increased the deficit. Next year, the Office of Protection Services will have to absorb one-half of the expected pay raise in FY 1991, which will amount to approximately $250,000.

Question 4: What galleries would be closed?

Answer: To the extent that the Institution can locate funds in FY 1990 to hire additional guards, we are optimistic that the need to close exhibit galleries will substantially decrease in the remainder of the fiscal year. However, some temporary gallery closings will continue to be necessary this year to adjust to daily guard absences for illness and other emergencies. Such closings were also necessary in past years, but the impact on the public is small. The Office of Protection Services (OPS) consults with museum directors and their staffs to identify galleries to be closed at these times. OPS bases the decisions in part on the configuration of spaces and the ease with which access to an area can be restricted, the popularity of an exhibit and the length of time it will be on view. Most museums elect not to close recently opened exhibits.

Question 5: How many FTEs and dollars would be saved by these gallery closings?

Answer: Until the corrective action mentioned earlier was put in place, it was estimated that approximately 95 FTEs and $1,067,000 would be saved on an annual basis by reducing guard strength through attrition.

Question 6: Did Congress approve your Office of Protection Service budget requests for the past several years?

Answer: The Congress has provided consistent support for the budget requests for the Office of Protection Services in the past several years. In fact, the Congress provided additional funding in FY 1990 to address the requirement for an increase of 10 guard positions for the Quadrangle that the Office of Management and Budget had not allowed the Institution to request in the budget. For FY 1991, the Smithsonian had included $455,000 to correct the structural deficit in the Office of Protection Services as part of its request to OMB, but the request was denied. The additional amount of $150,000 needed to correct the absorption of increased security costs at the Tropical Research Institute was not included in the Institution's request to OMB, since these costs surfaced after the Institution submitted its request for FY 1991 to OMB. Since the request to OMB was prepared, the structural deficit has grown due to the Gramm-Rudman-Hollings reduction of $318,000.

Question 7: In reviewing your FY 1990 and FY 1991 budget justifications, it seems that your estimates are coming in much higher than the actual FTEs used. For instance, we approved FY 1989 funding for 757 FTEs; however, the actual number of FTE's used in FY 1989 was 702. It appears that a similar situation occurred in FY 1988. Can you explain the difference?

Answer: In fiscal years 1988, 1989, and again in FY 1990, the Office of Protection Services has not had full funding for the authorized FTEs and so has not been able to fill the positions, because of annual absorption of the legislated pay increases, additional contractual security requirements at the Tropical Research Institute to protect staff and property during a time of political unrest in Panama, and inflationary increases in other objects categories of expense.

Question 8: Your estimated FTEs for FY 1990 are 764. Were the discrepancies between planned versus actual FTEs taken into consideration when this FY 1991 budget was formulated?

Answer: The FY 1990 estimate of 764 FTEs cited in the FY 1991 budget request represents the workyears allocated for the Office of Protection Services. Because of the erosion of resources discussed above and additional absorptions this year because of the Gramm-Rudman-Hollings sequestration and the Institutional assessment to cover the cost of paying the District of Columbia Government for water and sewer service, the Office of Protection Services does not expect to be able to staff up to the allocation level.

Question 9: What was the original museum summer schedule - what hours would you be open, on which days of the week?

Answer: The original museum summer schedule was to have the Air and Space, Natural History and American History museums opened until 9 p.m. seven days a week during Easter Week and from Memorial Day through Labor Day. This program also included the Museum of African Art and the Sackler Gallery during their first summer of operations. In FY 1989, due to budget limitations in the Office of Protection Services, the extended hours of operations during the summer months were reduced. The three large Mall museums operated from 9:30 a.m. until 7:30 p.m. between June 16 and Labor Day.

For FY 1990 there will be no change to regular visiting hours, which are 10:00 a.m. to 5:30 p.m., seven days a week year round except Christmas Day (when all buildings are closed). The reduced funding we are experiencing will only affect our ability to extend the 5:30 p.m. regular closing time of the three major museums to 7:30 p.m. during Easter Week and from mid-June through Labor Day period.

Question 10: What would be the modified schedule and when would it begin? When would it end?

Answer: The only change to summer visiting hours is that we will be unable to extend hours beyond the regular closing time of 5:30 p.m.

Question 11: How many FTEs would be saved by the schedule change and how many dollars would be involved?

Answer: There are about 24 FTEs and $455,000 required to hire guards to cover the summer extended hours. There are no FTEs associated with the other costs of extended evening hours (custodial overtime [$25,000] and utilities [$45,000]).

Question 12: What is your cost estimate related to evening hours which you are now proposing to eliminate and how much of that is associated with security guards?

Answer: Evening hours cost about $525,000, of which $455,000 is for security and the balance for utilities and custodial costs.

Question 13: Would you submit for the record an itemized listing of funding shortages related to the Smithsonian's evening summer hours?

Answer: Funding shortages related to the Smithsonian's evening summer hours include:

Temporary security personnel	$455,000
Utilities	45,000
Custodial overtime	25,000
	$525,000

American Indian Museum

Question 14: The Smithsonian is requesting $19.7 million for the American Indian Museum. Salaries and operating expenses are requested at a $11.6 million level. In addition, $8.1 million is proposed in construction funds for American Indian Museum facilities.

I understand that the Smithsonian proposed a $8,252,000 funding level to OMB for salaries and expenses. OMB responded with a $11,618,000 level which is $3,366,000 more than you requested. Is that correct?

Answer: The level of $8,252,000 mentioned above comes from a special report which reflects FY 1991 budget information utilizing a "standardized" base. The use of this standardized base allows the Institution to "factor out" the effects of changes in the FY 1990 base level and of revised estimates in certain uncontrollable costs, resulting in the prominent display of the effects of programmatic changes from one stage of the budget process to succeeding stages. As indicated in the next question, OMB provided for program growth of $3,366,000 beyond the request level for the National Museum of the American Indian as part of the FY 1991 passback.

Question 15: Mr. Adams, could you describe in general terms the items that OMB added to your budget request?

Answer: Of the total increase in programmatic growth between the FY 1991 OMB Request and the Congressional Request ($3,366,000), almost 60 percent is related to three specific programs authorized by the legislation that established the National Museum of the American Indian (Public Law 101-185). These three programs are: (1) Native American Collections Documentation Research ($1,000,000); (2) Special Review Committee on Native American Materials ($250,000); and (3) Native American Staff Development and Training ($707,000). The balance of the increase covered within the OMB allowance represents changes in the projected operating requirements related to the effects of FY 1990 Congressional action on FY 1991 and more recent budget projections based on the continuing planning process.

Question 16: A fund-raising office for the American Indian Museum is being proposed in your FY 1991 budget justification. The estimated cost for the office is $670,000 and requires 11 FTEs.

Since this is a brand new activity, presumably the 11 FTEs would translate into more actual positions than 11 by the end of FY 1991. What is your staffing plan for the fund-raising office and why are so many people needed?

Answer: The FY 1991 increase will provide funding for 11 positions for the fund raising office for the National Museum of the American Indian. In addition, a reprogramming request currently pending before the Appropriations Subcommittees would allow 2 positions approved for FY 1990 to be redirected for this use bringing FY 1991 staffing for the fund raising office to 13 positions. The types of staff which will be hired to undertake the fund raising effort include a National Campaign director, several development officers, a special events coordinator, a membership director, and secretarial support. The staffing plan for the office envisions that there will not be more than 16-18 people, even at the height of the campaign which will occur during the period FY 1992-1993. This staffing level, in comparison to staffing for fund raising campaigns undertaken by other major non-profit organizations, is extremely modest.

Question 17: What would you hope to accomplish with this staff?

Answer: This staff will be responsible for raising, from non-Federal sources, one-third of the construction cost of the Mall Museum of the National Museum of the American Indian, in accordance with legislative mandate. Based on the current estimate of the Museum's total construction cost ($106 million), the fund raising goal will be $35.3 million.

Question 18: Are funds being raised at the present time?

Answer: Funds are not being actively solicited at the present time, pending the completion of an overall plan for the fund raising campaign in July 1990. The Institution has received a few small and unsolicited contributions (less than $100 each) from interested Americans who have read about the development of the new Museum and have wished to express their support.

Question 19: The Smithsonian has used private monies to support fund-raising in the past. What is the justification for requesting federal funds for this purpose now?

Answer: Public Law 101-185, which established the National Museum of American Indian within the Smithsonian, contains a requirement that one-third of the cost of construction of the Mall Museum facility be obtained from non-Federal sources. Given this legislative mandate, it seems only appropriate that some modest level of Federal support would be provided to help meet the cost of raising those funds.

Question 20: Would this be a one-time fund raising effort?

Answer: It is expected that this fund raising drive will be a one-time effort in behalf of the National Museum of the American Indian and that the drive will take full advantage of the goodwill and generosity of the American people in connection with the new Museum's overall development.

Question 21 & 22: What would be the intended duration of this effort? Describe what activities would occur.

Answer: The fund raising drive will be initiated in FY 1991 and is currently expected to conclude by the end of FY 1995. The current development schedule for the Mall Museum facility calls for construction to commence in FY 1994. Non-Federal funds must be raised in order to release Federal matching funds. Present plans call for fund raising "wind-up" activities to occur in FY 1995, such as securing all payments on outstanding pledges, and preparing reports to donors, to volunteers and to the Congress on the campaign's achievements.

Question 23: Last year $100,000 was provided by Congress for a training program in museum sciences for native Americans. This year's justification seeks $707,000 for native American staff development and training.

How is the $100,000 being used in FY 1990?

Answer: The Native American Training Program in Museum Sciences is being developed by the Office of Museum Programs, the Institution's central museum training office. Regional Project Workshops will take place at three tribal museums and/or Native American cultural centers. Each organization will articulate a project they would like to undertake that requires technical assistance which the Smithsonian will provide. The chosen project will become a centerpiece of a Regional Project Workshop providing training opportunities for both staff at the host institution and others drawn from the region. Particular technical training, for example, collections management, exhibition design and educational programming, are the kinds of activities anticipated within the Project Workshop. Smithsonian Native American and other professional staff will serve as faculty. During FY 1990, the Office of Museum Programs will also expand opportunities for Residential Study Programs at the Smithsonian to train museum professional from throughout the United States in museum disciplines of particular relevancy to Native American collections, and with special emphasis on the participation of Native American individuals. (Note: Due to the effects of the FY 1990 Gramm-Rudman-Hollings reduction, FY 1990 appropriated funding for the training program was reduced from $100,000 to $99,000.)

Question 24: Is the total training program $807,000 for FY 1991?

Answer: The total funding available for Native American training programs for FY 1991 will be $806,000, representing the FY 1991 increase of $707,000 and the FY 1990 Post GRH base of $99,000. However, the Institution currently anticipates that the Training Program in Museum Sciences, approved in FY 1990, will continue to be administered by the Office of Museum Programs, and therefore, the funding of this program will be kept separate from the FY 1991 request to establish the Native American Staff Development and Training Program.

Question 25: How many native Americans would receive training under the $707,000 requested increase?

Answer: The NMAI training initiatives for FY 1991 will include ten Native American "upward mobility" positions, interns and fellows, non-Smithsonian Native American museum professionals, and Native American Smithsonian staff associated with NMAI planning efforts. The Institution estimates at this time that as many as 50 to 75 Native Americans would receive training during FY 1991 as part of this increase.

Question 26: Are the Bureau of Indian Affairs and the Institute of American Indian and Alaska Native Culture and Arts

Development involved with your training program activities? If so, describe how?

Answer: While no formal affiliations exist as yet, planning is currently underway for consultations, potentially leading to collaborative relationships, with the Bureau of Indian Affairs, the Institute of American Indian and Alaskan Native Culture and Arts Development, and as well as many Native American and non-Indian organizations, regarding NMAI training activities.

Question 27: What are your funding and training plans for FYs 1992, 1993, 1994, and 1995?

Answer: The museological training program, presently under development by the Office of Museum Programs, and the NMAI training program for Native American upward mobility positions to begin in FY 1991, form the core of our program and will continue in FY 1992 and beyond. In addition, work/training exchanges with off-site institutions, education fellowships, off-site courses toward degree programs in relevant fields, professional development opportunities for Native American faculty, teachers and non-Smithsonian museum professionals are among the many training possibilities under consideration for future years. The Institution does not expect Native American participants in these programs to pay tuition and therefore anticipates seeking Federal funds for these activities.

Question 28: When are the museums in New York City and in Washington, D.C., expected to open?

Answer: The museum in New York is expected to open in mid-1992. The museum in Washington, D.C. is planned to open to the public in 1998.

Question 29: What kind of positions would be established that would benefit by this training?

Answer: Among the first positions to be established will be those associated with collections management, community outreach and training, facilities/construction, program planning, development, technological applications, research, administration and international issues.

Question 30: How many positions, such as these, will be needed at each museum?

Answer: Ten such positions have been identified for FY 1991. Planning for personnel requirements for future years is currently underway in anticipation of the appointment of a director for the NMAI.

American Indian Museum Construction

Question 31: In 1991 the Smithsonian is requesting $8,130,000 for construction of American Indian Museum facilities. The facilities would be situated in three locations. A major museum building would be constructed on the Mall in Washington, D.C. A satellite exhibition and education center would be located in a portion of the Old United States Custom House at the tip of lower Manhattan in New York City. A collection storage and research facility would be located in Suitland, Maryland.

The Statement of Managers which accompanies the Conference Report on H.R. 2788, the FY 1990 Interior and Related Agencies Appropriations Bill, included the following:

> "With regard to the Museum of the American Indian, the managers are concerned about the accuracy of the cost estimates for construction of the proposed Museum facilities, and the potential for significant increases in these estimates. Future budget submissions should contain a detailed project cost baseline before construction funds are requested, and should also reflect cost-sharing proposals using non-Federal funds."

Secretary Adams, has your organization submitted a detailed project cost baseline to the subcommittee?

Answer: Public Law 101-185 places a limitation on obligation of Federal funds by the Smithsonian "for actual construction of any facility under this section until the 60th day after the date on which the Board of Regents transmits to Congress a written analysis of the total estimated cost of the construction and a cost-sharing plan projecting the amount for Federal appropriations and for non-Federal contributions for the construction on a fiscal year basis." It is the Institution's intention to provide the Congress with all requested information. Once planning for each of the buildings is completed, information can be developed on costs. Based on the current scope and planning schedule for the Custom House, the construction cost estimates and cost sharing projections will be available this summer. The Institution is requesting construction funding in FY 1991. These funds would be obligated by contract award around March 1991.

The Smithsonian currently expects to complete planning for the Suitland facility in 1991 and will request funds to complete the design and begin construction in FY 1992. Planning for the Mall building will be complete in FY 1992; construction funds will not be requested until FY 1994.

Question 32: The ~~State of New~~ York and New York City have pledged to contribute one-third of the cost, or up to $8 million apiece for renovation of the Custom House for museum use. When will the State and City contributions be made available?

Answer: The Institution has held discussions with both the State and City. The City is prepared to take the lead in developing a memorandum of understanding with the Institution that would provide necessary funding in a timely fashion and provide the City and State consultative opportunities throughout the project. We anticipate initial receipt of City and State funds under this arrangement during FY 1990 and the balance in FY 1991.

Question 33: Exactly what space will be renovated for use by the Smithsonian?

Answer: Smithsonian staff and members of the Board of Trustees of the National Museum of the American Indian have jointly agreed that the 82,500 square feet provided in the enabling act (P.L. 101-185, November 28, 1989) should comprise the rotunda level within the Custom House, to be used mainly for exhibition and education purposes; shared use of the building's loading dock and auditorium with GSA's other tenant-occupants; and staff office space, rounding out the 82,500 square feet envelope, located on the building's first level.

Question 34: What is the status of the Custom House planning and design which was funded in FY 1990?

Answer: The Institution is presently negotiating a planning and design contract for the Custom House project with the architectural and engineering firm selected by the General Services Administration to design the renovation of the other six and one-half floors of the building.

Question 35: When do you expect to have the planning and design phase completed?

Answer: The Institution expects to complete the planning of the Custom House space, including construction cost estimates, in late June or early July. Design is scheduled to be complete by December 1990.

Question 36: When do you anticipate that the construction contract will be awarded and signed?

Answer: The Smithsonian plans to request bids for construction in early January 1991, and expects to award the contract by the end of March 1991.

Question 37: In addition to the American Indian Museum you are making plans for an Air and Space Museum Annex for approximately $330 million and an African-American proposal. Is it fair to assume that the African-American endeavor will cost as much as the Air and Space Museum Annex?

Answer: It is too early to estimate the cost for such a facility since the current task of the African American Initiative is to ascertain what kind of organizational shape this initiative should take, and what physical structure would be reflective of the results of that investigation. If, based upon the recommendations of the Advisory Committee, the Board of Regents recommends a separate African American museum, then the Institution would prepare cost estimates for design and construction for the facility.

Repair and Restoration versus Construction

Question 38: Let's turn from your construction plans to discuss the Smithsonian's Repair and Restoration of Buildings program. It seems that proposals and commitments are being made to construct new museums, storage buildings, annexes, research centers, and other facilities without considering the total Smithsonian picture. It appears that in the headlong rush to build new facilities, your backlog of maintenance and restoration needs is being neglected.

Secretary Adams, I understand that your request to OMB for Repair and Restoration of Buildings was $35 million. However, the figure that came back from OMB was $28.7 million. Is that correct?

Answer: Yes, the Smithsonian request to the Office of Management and Budget was $35 million for Repair and Restoration of Buildings. OMB allowed the Institution to request $28.7 million for R&R in the FY 1991 budget request to the Congress. Even though OMB has supported the expansion of the R&R program for the past several years, the realities of the current economic climate have forced it to hold the R&R account to a slower rate of growth than the Institution believes is necessary. It should be noted, however, that, with both OMB and Congressional support, the annual appropriation for Repair and Restoration of Buildings has more than doubled in five years from $12.4 million received in FY 1986. The Institution will continue to seek OMB and Congressional support to reach the optimal level of $35 million per year for R&R funding.

Question 39: Your FY 1991 budget justification tells us that the past years' funding level for maintenance, repair, and preservation of buildings have not kept pace with the rate of deterioration. In addition, heavy public use of buildings and the demands on building equipment and systems for constant temperature and humidity levels to protect the National Collections exacerbate the natural aging process of building materials. The Smithsonian also has an obligation to ensure a healthy and safe environment for visitors and staff.

What is your current backlog estimate?

Answer: The January 1990 estimate of the current backlog is $229,069,000.

Question 40: Does your FY 1991 request of $28,656,000 provide funds to adequately meet all of the Smithsonian's repair and restoration needs for FY 1991?

Answer: The $28,656,000 does not provide funds to meet all of the most urgent repair and restoration needs for FY 1991. The Institution sought a funding level of $35,000,000 in the budget request to the Office of Management and Budget. The lower amount will cause deferral of a number of important projects to a future year. Any repair project that is deferred is naturally subject both to the further ravages of time and cost escalation.

Question 41: Will additional projects be added to the backlog this year?

Answer: Our definition of the backlog of essential maintenance and repair includes all existing repair, restoration and code compliance requirements for which funding is not yet available. New projects will continue to be added to the backlog each year as a result of annual or biannual inspections by staff in the Office of Plant Services, the Office of Environmental Management and Safety and outside technical experts. The natural aging process of the buildings, exacerbated by heavy public use and demands for exacting climatic conditions contributes to the ongoing deterioration of the building components, systems and equipment. As conditions worsen, or as new life safety and health regulations require modifications, projects for which funding is not available are added to the backlog listing.

Question 42: What sustained funding level would be required each year, say for the next 10 years, to eliminate the backlog?

Answer: The Institution needs a consistent funding level of approximately $35 million annually (in FY 1991 dollars) in order to be able to eliminate the backlog within eight to ten years. While a larger annual increment would speed completion of the work, the increased volume of work would require a substantial increase in staff to manage and implement the program and cause unacceptable disruption to the Smithsonian's public programs.

Question 43: The nation's people come to Washington, D.C., to see the magnificent Smithsonian Institution and its treasures. It is a major attraction to our nation's capital. The Smithsonian museums contain artifacts not only from our country but also from other countries around the world, reflecting the diversity and origins of America's people.

Will we one day soon be standing in the middle of the Mall looking at our Smithsonian buildings but unable to enjoy and to learn from the contents because the buildings are unsafe and unusable? Funding is limited and choices must be made.

In the construction section of your budget justification (page 293), the following statement is made: "The Institution is currently considering a facilities expansion or improvement program that may total $600,000,000 over the next 10 years." Would you explain what this statement means?

Answer: During FY 1989 the Institution assembled a long range facilities development plan to address its most urgent program needs. The plan projects how the projects might be spaced over a ten year period and identifies funding that might be required to achieve these goals. The total, $600,000,000, represents an order of magnitude figure only, as the Institution has not yet fully developed project scopes necessary to establish firm cost estimates for many of the projects. Planning is underway for several of the projects in the near term using construction planning funds appropriated beginning in FY 1989. The Institution will use planning funds requested for FY 1991 and future years to define the project scopes, cost estimates and schedules, for projects such as the Air and Space Museum Extension, the General Post Office Building, the Collections Management Centers and the Tropical Research Institute.

Question 44: Mr. Adams, do you agree with me that it is more important to take care of what we have than it is to build more buildings which will bring even greater maintenance and staff demands on our limited financial resources?

Answer: While it is true that the Smithsonian's existing physical plant is one of its most valuable assets and, clearly, its proper maintenance has to be a high priority, the Institution's collections, staff and visiting public are three additional assets which cannot be set aside categorically. Proper housing of our nation's patrimony (which, of necessity, grows every year), providing proper space for our staff so that their productivity is not compromised, and enabling the public to have improved access to our holdings must also be accorded high priority. To do less would be to shirk essential parts of our stewardship responsibilities which the Congress entrusted to the Smithsonian when it accepted James Smithson's bequest.

Question 45: What difficulties do you foresee in delaying construction on projects, such as the American Indian Museum; the two Rock Creek Projects; or the Conservation Analytical Laboratory, while you reduce your maintenance backlog?

Answer: Each of the major items included in the facilities planning, repair, restoration, and construction portion of our budget has already been subjected to scrutiny by three levels of management, within the Smithsonian, by the Administration's Office of Management and Budget, and by the Institution's Board of Regents. Each represents a carefully considered step toward fulfilling responsibilities which devolve upon the Smithsonian from its initial charter and from subsequent enactments by the Congress. Categorically to abandon many of those responsibilities in favor of one objective alone would unbalance the resulting program and create a variety of other backlogs -- e.g., in progress toward achieving the unanimously enacted National Museum of the American Indian; in integrating the presentation of plant, animal, and insect life toward improved public understanding of global change; or in providing improved conservation of the collections we hold in trust for future generations.

Inspector General's Report

Question 46: The Inspector General's Semiannual Report for the period April 1, 1989, to September 30, 1989, reported some significant problems, abuses, and deficiencies. Based on the audits, the Inspector General concluded that the most significant problems existed in the Smithsonian's effort to achieve full inventory control over its large, valuable collections; the procedures used to control inventories and cash receipts in the Smithsonian museum shops; and the procedures used by the Smithsonian to review and process petty cash payments.

What measures have been taken to inventory and to establish controls over your collections?

Answer: The Inspector General's report refers to audits of the Smithsonian's two largest museum collections, that of the National Museum of Natural History and the National Museum of American History. Those audits recognized the existing inventory records already created for these collections, but recommended a total of thirteen action steps management should consider to ensure that controls over the data and the objects they refer to remain fully effective. Smithsonian management agreed with each of these recommendations, and sought approval from OMB for additional funding of $783,000 to implement these recommendations as part of the FY 1991 budget. Although this funding was not approved as part of the FY 1991 OMB Passback, the Institution will continue to seek approval for these audit recommendations in the future.

Question 47: What actions have been taken to eliminate the suspected fraudulent acts involving the museum shops?

Answer: The Museum Shops inventory shrinkage in January, 1989 was 5.1 percent of sales. The retail industry average for specialty shops with over $20 million in sales was 1.6 percent in 1988 as reported by the National Retail Merchants Association 1989 edition of "Financial and Operating Results of Department and Specialty Stores."

In response to the January, 1989 inventory result, Smithsonian management restructured reporting relationships within Museum Shops, enlisted the assistance of the Institution's Acting Inspector General, and took concrete actions to improve the protection of Smithsonian cash and merchandise assets. Specific actions have included the hiring of a Loss Prevention Manager with extensive retail security experience; the identification and protection of merchandise especially subject to high shrinkage; the installation of new locks, security alarms, mirrors and locked doors in public areas, merchandise stock rooms and cash handling areas; and several major changes in inventory procedures.

An improving trend began in September, 1989 when the shrinkage decreased to 2.49 percent of sales for the period January, 1989 - September, 1989. The shrinkage results for the most recent inventory for the period from September, 1989 to January, 1990 were 0.88 percent (about one half of the industry average). In a March

1, 1990 memo, the Smithsonian Institution Office of Inspector General determined after a post-audit of the January, 1990 Museum Shops physical inventory reconciliation that the 0.88 percent inventory shrinkage was properly reported.

In order to achieve this significant improvement expeditiously, priority has been placed on inventory shrinkage reduction through a series of awareness meetings at all levels in the Museum Shops organization. To avoid complacency with the interim success, a series of meetings and follow-up actions will be taken to maintain the appropriate emphasis on these matters.

Question 48: What procedures have been put in place to prevent small purchases and petty cash embezzlements?

Answer: The Institution uses a four tiered system of controls to guard against fraud and embezzlement from the small purchase order and petty cash payments systems.

The first tier is the separation of the responsibility for authorizing an expenditure from that for controlling the funds to be used. The Office of Procurement and Property Management and the Office of Accounting and Financial Services maintain lists of the approved individuals throughout the Institution who are tasked with these separate responsibilities. The standard forms used in pay systems are checked when first initiated to determine that only authorized individuals have signed each required approval.

The second tier relates to enforcement of the policies, rules and training established to transact petty cash vouchers and small purchase order invoices. Petty cash and small purchase order documentation is scrutinized by trained technicians for compliance with all policies and rules to detect unauthorized purchasing.

The third tier is the financial reporting cycle. Each organization receives monthly reports of their transactions. Administrative Officers reconcile the unit transactions shown on these reports with their own records. Any discrepancies are reported to the Office of Accounting and Financial Services (OAFS) for research and resolution. This cycle ensures a constant feedback on the accuracy of the financial reports.

The last level of control is the audit phase which includes both informal and formal programs. Audits are performed by OAFS and the Inspector General as well as external agencies such as the DCAA, GSA, and the Institution's CPA firm, Coopers & Lybrand.

Global Change Research

Question 49: Our nation is continuing to become increasingly concerned about the global change issue. The Committee on Earth Sciences (CES) is the coordinator of the current federal global change activities. On February 6 of this year, the Senate passed unanimously S. 169, the National Global Change Research Act. The intention of this Act is to pull together national goals and priorities for global change research. This new legislation assigns responsibility to the CES for establishing national goals, defining roles, reviewing budgets, and reporting to Congress.

Global change research is one of your initiatives in the FY 1991 budget request. How much of the $41 million increase is tied to your global change initiative?

Answer: The Smithsonian's FY 1991 budget request includes increases totaling 14 workyears and $1 million in the Salaries and Expenses account for global change research initiatives at the Smithsonian Astrophysical Observatory, Tropical Research Institute, Environmental Research Center, National Zoo, International Environmental Science Program, Museum of Natural History, and the Air and Space Museum.

In addition, two construction projects would provide facilities to support research in, and public awareness of, global change issues. In the Construction account, the Institution requests $1.55 million to construct a research vessel to enable the Smithsonian Tropical Research Institute to conduct ocean-based research on marine systems at sites extending from the Atlantic Coast of Columbia to the coast of Costa Rica. In the Zoo Construction account, the Institution requests $3 million to fund the first phase of the Smithsonian Tropical Science and Global Environmental Science Gallery at the National Zoological Park to educate and inform visitors about tropical biology and global problems.

Question 50: Why wasn't the total for this initiative summarized in the budget justification so the Subcommittee could have a comprehensive understanding of this initiative and your total proposed resource requirements for it?

Answer: Although a summary of FY 1991 global change research increases appears in the Introduction section (pp. 11 and 12) of the Institution's budget justification, the line-item presentation of the document often does not lend itself to highlight pan-Institutional initiatives in a comprehensive manner. The following summary of FY 1991 increases for global change research provides this information:

Smithsonian Astrophysical Observatory (SAO) - 2 workyears and $180,000. Worldwide use of chlorofluorocarbons, which are chemicals used for refrigerations, insulations, and other purposes, and emissions of carbon dioxide, nitrous oxides, and methane are believed by scientists to be linked to the partial destruction of the ozone layer. SAO proposes to hire two atmospheric physicists to develop instruments to make atmospheric measurements from balloons and spacecraft and carry out laboratory studies of the spectra of key molecules associated with ozone destruction found in the atmosphere. These studies will contribute to the development of strategies to curb the depletion of the protective ozone layer.

Smithsonian Tropical Research Institute (STRI) - 2 workyears and $106,000. Tropical deforestation threatens the extinction of many species before science understands their ecological roles and explores their possible benefits. STRI proposes to hire a scientist and a technician and to enhance its ongoing global change research including long-term physical and biological monitoring, and investigation of biological and geological mechanisms of change. These studies will contribute to the understanding of the effects of deforestation on atmospheric water cycles, the production of greenhouse gases, and siltation of coastal marine habitats.

Smithsonian Environmental Research Center (SERC) - 1 workyear and $150,000. As part of global change research, SERC is studying the effects of increased atmospheric carbon dioxide concentrations and the interactions of the atmosphere with the soil and the forest canopy. SERC is also working with STRI to compare data on the interaction of the atmosphere with temperate forest ecosystems at Edgewater with similar data from the tropical forests on Barro Colorado Island in Panama. These initiatives will generate immense volumes of data. SERC proposes to hire an ecosystems modeler to manage and analyze both data bases and to upgrade their computer system. The proper management and analysis of these data bases are essential for accurate reporting of research results and for assisting scientists in developing future solutions to the problems associated with global change.

National Zoological Park (NZP) - 2 workyears and $100,000. Recent evidence of population declines in migratory landbirds in North America are thought to be due directly to the habitat destruction and degradation that has occurred in tropical forests, the wintering grounds of many North American birds. The NZP proposes to hire an avian ecologist and a biotechnician to study the effects of habitat destruction on migratory bird populations. This research will provide important data on methods for mitigating the effect of forest loss on songbird populations.

International Environmental Science Program - 2 workyears and $134,000. The collection of long-term data in tropical environments is increasingly important for understanding global change. The IESP proposes to hire an environmental engineer and a data manager to expand its physical monitoring at STRI. Physical monitoring of meteorological and hydrological variables is performed at Barro Colorado and the Galeta marine laboratory. Researchers plan expansion of physical monitoring to other sites in the San Blas and Naos Islands and in the Perlas Islands in the Pacific. These studies will enable researchers to understand better how tropical habitats respond to changes in physical parameters such as rainfall, temperature, sea level, and the mix of gases in the atmosphere.

National Museum of Natural History (NMNH) - 4 workyears and $259,000:

-- The Amazonia Biological Diversity Program - 3 workyears and $134,000. Tropical forests, especially in Brazil, are being destroyed by human alteration, primarily burning. NMNH proposes to hire a senior scientist, a program administrator, and a secretary for its Amazonia Biological Diversity Program to assume administrative responsibilities for the Biological Dynamics of Forest Fragments (BDFF) project transferred to the Smithsonian Institution in FY 1989 from World Wildlife Fund, and for its Biological Diversity of Tropical Latin America Program (BIOLAT).

Under BDFF and BIOLAT, scientists study the changes that occur in the rain forest ecosystem as human development encroaches upon it. Researchers inventory the flora and fauna in a series of isolated forest reserves and measure the physical changes in the understory microclimate and soil moisture. Biotic and physical changes are then related to the size of the forest reserve under study. Resulting analyses will provide guidelines for the integration of conservation and economic development.

-- Coastal Oceans Research - $50,000. NMNH pursues basic research on environmental change in coastal ecosystems at a number of sites. NMNH seeks funding to establish a weather station on the Belize Barrier Reef site, funding to cover travel costs for a specialist to install the weather station, and funding to lease the site for an additional three months to complete a full year. The weather station will allow real-time transmission of data on climatic and ocean conditions using measurements of wind speed, wind direction, air temperature, solar radiation, water level, surface water temperature and rainfall. These data will help to document changes over the long term in the climate and ocean and the impact of these changes and catastrophic events, such as hurricanes, on the animal and plant populations in the Caribbean reef ecosystems. Such local changes linked to changes in rainfall and temperature globally, are integral to analyzing the greenhouse and global warming trends. The Belize site will be integrated with similar sites operated by STRI (see above).

-- Global Change in Arctic Ecosystem Research - 1 workyear and $75,000. Global change is not restricted to the tropics. Owing to exceptional preservation, Arctic and sub-Arctic archeological sites can yield important data on the impact of long-term climatic change on natural, biological and cultural systems. The NMNH proposes to hire an Arctic archeologist. Research will concentrate on two aspects of global change. In the climatically rigorous Eastern Arctic, researchers will look for signals of climatic and environmental change in cultural and demographic-territorial change of Indian and Eskimo cultures over the past 10,000 years. In the Western Arctic, researchers will place emphasis on social and technological factors of change seen through the dynamic interaction of Alaskan and Siberian cultures. The results of both studies will be linked with research results from other circumpolar areas to develop a general model of circumpolar cultural response of changing global environments.

National Air and Space Museum - 1 workyear and $71,000. Scientists in NASM's Center for Earth and Planetary Studies (CEPS) apply the experience and techniques they have gained from various remote-sensing investigations of terrestrial deserts to analyze changes in our planet. NASM proposes to hire an atmospheric scientist to make the atmospheric corrections necessary to interpret remote-sensing data and to enhance its capability for monitoring global environmental consequences of human activity, such as desertification, deforestation, and soil erosion, as well as climate change and the decline of the stratospheric ozone.

Question 51: Is the Smithsonian a member of the Committee on Earth Sciences?

Answer: The Smithsonian is not a member of the Committee on Earth Sciences. The Smithsonian is an independent trust instrumentality of the United States. Given our non-governmental charter, formal membership in any federal inter-agency committee is inappropriate. We are, however, observers; and we remain involved with the Committee in that status.

Question 52: Please explain the Smithsonian's role in relation to other agencies that are assigned responsibilities for global change research.

Answer: Although the Smithsonian has no assigned agency responsibilities for global change research, our principal research programs focus on biological sciences, systematics, ecology, and biodiversity studies which most agencies are not involved in. To the extent that earth and atmospheric studies are carried out by the Smithsonian (at the Smithsonian Astrophysical Observatory and the National Air and Space Museum), they involve research that complements that carried out by other agencies. Such Smithsonian research is well coordinated with and sometimes done in conjunction with other agencies.

Question 53: What unique qualifications does the Smithsonian have in this area?

Answer: The Smithsonian Institution is ideally positioned to undertake important research initiatives in the field of global change by building upon its current programs. With more than 150 scientists in a variety of biological and physical science disciplines (coupled with its stewardship over large, protected areas in both the tropical and temperate zone), the Institution can undertake comparative studies to assist in understanding the complexities of global problems.

For example, the Institution's International Environmental Science Program has been monitoring both biological and physical processes for more than 20 years and it currently possesses an incomparable set of data for both tropical and temperate sites. The research at the Smithsonian Tropical Research Institute (STRI) and the Smithsonian Environmental Research Center (SERC) will exploit and build upon the unique data already in the possession of the Institution. The permanent nature of the Smithsonian's study sites at STRI and SERC fit the criteria for global monitoring centers cited in the National Academy of Sciences report and endorsed by the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) Committee on Earth Sciences. Moreover, the National Museum of Natural History is the world's largest repository of data and expertise in systematic biology, a science essential to understanding and conserving biological diversity on the planet.

The Institution's proven ability in sustaining long-term research at permanent sites, and to maintain systematic data bases, is a crucial function that distinguishes the Smithsonian from Federal organizations and most universities involved in such research.

The Smithsonian Institution also plays an important role in disseminating information on global environmental issues, through exhibitions in the National Museum of Natural History, the National Air and Space Museum, and other venues for public programming. A very recent addition to the Smithsonian's contribution to educational programming in this field is the Office of Environmental Awareness, a newly-established component of the Institution's International Center. The Office of Environmental Awareness works with scientists and educators in the bureaus to answer public inquires, review recent environmental developments, and design outreach programs for the general public and specialized audiences to increase public understanding of environmental issues.

Question 54: What kind of global changes issues have you been involved with in the past?

Answer: The traditional expertise of several Smithsonian bureaus in the fields of environmental and biological research, including the Tropical Research Institute, the Environmental Research Center, the National Zoo, the Museum of Natural History, and the International Environmental Science Program have been strengthened over the past several years. With tropical biology and biological diversity research as important priorities for the last five years, these long-standing programs have been reinforced and several major new initiatives have been started, including the Smithsonian/Man and the Biosphere Program, the application of satellite remote-sensing data analysis to global environmental issues, and the chemical analysis of atmospheric molecules in the stratosphere.

Both Congress and the Office of Management and Budget have strongly supported Smithsonian initiatives in these areas. During the FY 1990 appropriations process, Congress added a total of $641,000 (after the FY 1990 Gramm-Rudman-Hollings reduction) for Global Change Research projects, including the Climatology Initiative and Canopy Access System at STRI; the Comparative Study of CO2 at SERC; the Cryobiology Initiative and Endangered Species Breeding programs at the National Zoo; Remote-Sensing Applications to Global Environmental Studies at NASM; the Smithsonian/Man and the Biosphere Program; and other Institution-wide support for Global Change Research. In the FY 1991 OMB passback, OMB approved $1 million in new funding for the Institution's Global Research programs, including funding for Atmospheric Chemistry Studies at SAO; Biological and Geological Mechanisms of Change at STRI; a Migratory Bird Survey at the National Zoo; the Long-term Physical and Biological Monitoring Program of the International Environmental Science Program; the Amazonia Biological Diversity Program, Coastal Oceans Research, and Arctic Ecosystems Research at the Museum of Natural History; and Global Studies Applications of Remote-Sensing Analysis at NASM.

As described in a report, Environmental Activities at the Smithsonian Institution, 1988-1989, prepared by the Office of the Assistant Secretary for Research, Smithsonian bureaus are currently working on more than 160 research, education, and public service projects in the area of global environmental issues. (The Institution will provide a copy of this report to the Subcommittee.)

Finally, the Institution has very recently strengthened central Institution-wide support for these programs through the establishment of the Office of Environmental Awareness in the International Center. The Office of Environmental Awareness will work with experts from both within and outside the Smithsonian to disseminate research results and information related to environmental conservation for both the general public and specialized audiences. This pilot program will complement existing Smithsonian global change research and bureau-based educational programs by focusing on specific environmental topics and audiences.

Question 55: The Smithsonian is not a member of the Committee on Earth Sciences. The Smithsonian does receive grants and contracts from various government agencies to work on projects for which it has special expertise. Why should the Smithsonian assume line responsibilities for a research effort of this sort; couldn't agencies in the Committee on Earth Sciences contract with you for assistance on global change issues?

Answer: The Smithsonian's line responsibility for global change research stems out of our past research experience and capacity of scholars to carry out such research. On occasion agencies do contract with the Smithsonian; for example, the Mineral Management Service has contracted with STRI to conduct research on a major oil spill in a coral reef mangrove environment in the Caribbean.

Cultural Diversity and Cultural Equity

Question 56: On November 16, 1989, the Committee on Government Operations of the House of Representatives issued a report, "The Challenge of Cultural Diversity and Cultural Equity at the Smithsonian Institution." The report addresses employment trends with regard to minorities at the Smithsonian Institution. I would like to read the following from their report:

> "Documents and testimony received by the subcommittee reveal that although minorities comprise approximately 38 percent of the Smithsonian's work force, the great majority of these workers are clustered in low paying, semi-skilled and unskilled occupations. Minorities are grossly underrepresented in senior level management and professional positions, and virtually nonexistent on the Institution's many advisory boards, committees and councils. The pattern of underrepresentation at the Smithsonian begins at the level of its highest policy making body, the Board of Regents, and permeates every tier of the organization."

The report goes on to say:

> "This virtually "minority-free hierarchy" at the Institution not only eliminates the views and sensibilities of minorities from shaping the complexion and direction of policy making at the Smithsonian, but also excludes their input in major decisions that influence the tenor of scholarly research,

the classification of its collections, the installation of permanent exhibits, and the preservation of historical sites."

Page 21 of the Smithsonian Institution's budget justification addresses your special employment initiatives - the FY 1989 "Quick Hire" program and the FY 1990 "Step Up 90" upward mobility program. Your justification states that you are planning to begin an "Affirmative Culture Transition" program.

How successful have your FY 1989 and FY 1990 employment programs been?

Answer: In FY 1989 we began the "Quick Hire" program designed to bring in as many external qualified minorities into temporary positions as possible, as quickly as possible. Of the 21 FTEs (22 positions) later authorized by Congress, nineteen have been filled. Two of the early selected candidates were non-citizens which set back the recruitment for those positions. There has been some difficulty in filling the last three positions, but the Director for Office of Wider Audience Development should come on board by the end of April; and the other two positions in Natural History and American History should be open for application again this month. The Institution hopes to complete Phase I of the Special Employment Initiatives program by May 1990.

Phase II--Step Up 90, an upward mobility program geared to internal staff, is just getting off the ground. The first five positions will be announced in early April and the last five position descriptions are in the process of development and should be announced no later than May 1. The positions chosen show a strong commitment by the Institution to open opportunities for on-board employees to train and advance into true professional careers either in museum fields or research.

Question 57: Briefly describe the Affirmative Culture Transition program. Is it to begin in FY 1991?

Answer: The Affirmative Cultural Transition (ACT) program, that the Smithsonian proposes to initiate in FY 1991, will be Phase III of the Institution's Special Employment Initiatives and is a more formal continuation of the initial "quick hire" effort. The program is specifically designed to address concerns expressed in the report of the Committee on Government Operations (House Report 101-391). Under this program, the Institution has specially targeted four Smithsonian bureaus which currently have no minority representation in their professional or senior level ranks. The requested funding (4 workyears and $248,000) will be used to fill a specific position in each of the following organizations: the Smithsonian Astrophysical Observatory, the Hirshhorn Museum and Sculpture Garden, the Cooper-Hewitt Museum, and the Smithsonian Traveling Exhibition Service. The positions will be advertised as soon as the FY 1991 appropriation is received and will remain open until qualified minority candidates surface through the normal civil service competitive process.

In addition, ACT will serve as the long-term approach and commitment the Institution has to have to make changes in its professional ranks. The Secretary has given specific responsibility to the Acting Assistant Secretary for Public Service to advise and coordinate activities related to cultural diversity. The Smithsonian has made this a stated area of emphasis in its Five-Year Prospectus.

Question 58: The Cooper-Hewitt National Museum of Design, the Hirshhorn Museum and Sculpture Garden, the Smithsonian Astrophysical Observatory, and the Smithsonian Institution Traveling Exhibition Service have been targeted for four minority candidate positions. Do you expect this to be a one-time effort? Do your intend to target other museums in the future?

Answer: The four bureaus mentioned were specifically targeted because of the total absence of minorities among their professional and senior ranks. These are the only four of the major bureaus where this condition exists. The Institution sees its request for funding and workyears to be a one-time base increase, but the effort to increase minority representation in these and all of its organizations is on-going.

Question 59: The Committee's report states that your established initiatives address increasing minority representation in junior level management and professional positions. However, before a real change can occur, the same ardor must be applied in the senior level management and administrative positions. What are your recruitment plans for the senior level management and administrative positions?

Answer: The Institution is exploring several options on how to get more minority representation at the senior management levels. With the recently established assistant secretary level responsibility for attention to these matters, we hope that a definite action plan will be forthcoming shortly. During the past year, the Institution has made two minority appointments at the assistant secretary level, and has just appointed a minority to a senior administrative position.

Question 60: An important point that the committee made was that without a diverse work force the accurate and ample portrayal of the art, life, culture, and history of minorities at the Institution will not be possible. What are you doing to bring minority researchers and minority curators into your organization?

Answer: The Institution is in complete agreement with the Committee's findings on this point. It is for this very reason that the Institution undertook the Special Employment Initiatives. Two problems in the past have been low turnover in research and curatorial positions, and a paucity of minorities trained in many of the traditional areas of Smithsonian focus. Recently, some organizations have made wider use of guest curatorships and contractual help to assure minority perspectives in various programs and exhibitions, but such efforts don't improve the work force profile. The Smithsonian has a longstanding fellowship and internship program designed to encourage and attract college students into research and museological careers. The Institution began the Career Awareness Program (CAP) eight years ago to develop interest in these same careers among local high school students, most of whom are minorities. These are both long term efforts whose results cannot be easily translated into work force statistics as yet.

Question 61: The Committee on Government Operations also cited an example of Hispanic art which was misclassified due to the Smithsonian's lack of expertise in this area. What have you done to assure that your have individuals on your staff with expertise in the Hispanic art field?

Answer: Although the Smithsonian has fewer Latino/Hispanic professionals on the permanent curatorial/research staff than it wishes, the Institution is not without the input and influence of Latinos in our research and programming. For example, the Department of Anthropology, National Museum of Natural History, has had a long-time relationship with visiting scholars from Latin and South America. Researchers from Brazil, Chile, Argentina, etc., have come to the Smithsonian on Guggenheim and Fulbright Fellowships, short-term visitor grants, and under the auspices of Latin and South American governments. Visits range from a few days to a few years. In addition, collaborations often continue after the scholar returns home. Other museums obtain Latino/Hispanic expertise through contracted experts. On a more positive note, the Hirshhorn Museum and Sculpture Garden and the National Museum of American History have recently hired Hispanic professionals in research/curatorial positions for their collections and exhibitions programs. In anticipation of new or future curatorial vacancies, Smithsonian art museum directors have begun to seek qualified minorities, of all cultures, to broaden the research and programmatic perspective of their museums. Finally, through the Institution's Columbus Quincentenary Program and the proposed establishment of an "Institute of the Americas" after the Quincentenary, the Smithsonian is striving to generally reinforce its expertise in the intellectual, ecological and other issues that affect this hemisphere.

Research Salary Rates

Question 62: Under the purview of the Assistant Secretary for Research, the FY 1991 FTE costs for the various organizations range from $23.9 thousand to $54.4 thousand per FTE.

Why is there such a difference in FTE costs between Research organizations?

Answer: The difference in FTE costs between research organizations is attributed to the requirements of each individual organization. For example, the number of scholars pursuing careers in the biological sciences is greater than the number of scholars pursuing careers in astrophysics. Therefore, at the Smithsonian Astrophysical Observatory (SAO), in order to attract and keep first-rate scholars in the field of astrophysics, we are forced to offer the highest salary possible under the current Federal pay scale.

This has not been the case in the past for the biological sciences field. Also, the number of support personnel required, i.e. clerical, administrative, technical assistants, and custodial, varies between organizations and therefore attributes to the average costs per person.

Question 63: What is the average GS grade for the Astrophysical Observatory?

Answer: The average GS grade is 12.4. Of the 100 SAO employees on the General Schedule, 65 are scientists, 16 provide technical support (engineers, computer programmers, etc.), and 19 provide administrative support (librarians, program administrators, clerical workers, etc.). SAO's unusually lean staff (i.e. relatively few support personnel) accounts for the relatively high average GS grade.

Question 64: Why does the program increase for the Astrophysical Observatory for 2 FTEs require $180,000 and the program increase for the Tropical Research Institute for 2 FTEs require $106,000?

Answer: Even though both increases request 2 workyears for 2 new full-time permanent positions, the level of requested funding differs according to personnel costs required for each position and the amount of nonpersonnel support funding requested in each increase. For SAO, the 2 requested positions are for 2 atmospheric physicists (2 workyears and $176,000) with a sum of $4,000 requested for other support costs. For STRI, the 2 requested positions are for a scientist (1 workyear and $79,000) and a technician (1 workyear and $22,000), with a sum of $5,000 requested for supplies and materials.

Question 65: The Environmental Research Center is requesting a program increase of 1 FTE and $150,000. In addition to hiring an ecosystem modeler, funds could support the upgrading of the Center's computer system. What is the estimated salary cost? If you were to receive the $150,000 could we expect to see a reduction in the FY 1992 budget request related to the one-time cost of upgrading the computer system? What would the reduction be?

Answer: The estimated salary and benefits cost for the ecosystem modeler position is $50,000. For the support of the data management and modeling of the global change data, an additional $30,000 would be necessary for supplies and services. In addition, the requested funding provides $70,000 to begin to upgrade the Center's computer, now eight years old, during FY 1991. Recent staff growth and rapidly increasing demand for electronic data processing have already strained SERC's obsolete computer facilities, so an upgrade is necessary to meet the demands of new staff, new projects, and increased commitment to modeling arising from the Global Change Program. The upgrade would require funding for three years.

In FY 1991, SERC would replace the eight-year old central minicomputer with a new model providing more than four times the processing power and twice the disk storage of the present system.

In FY 1992, continuation of this level of funding will allow SERC to acquire relational data management software for the central minicomputer and for microcomputer work stations.

In FY 1993, SERC would use this funding to upgrade computer peripherals, providing up-to-date microcomputer work stations for research staff. SERC would also upgrade its local computer network to provide high-speed communication between all the scientific workstations and the central minicomputer.

For FY 1994 and following years, SERC may seek to retain at least a portion of this funding for the future costs of maintaining this computer system and further upgrading.

National Zoological Park

Question 66: The National Zoological Park is requesting a $100,000 program change for FY 1991. One component of the request is for $25,000 to purchase necessary laboratory supplies for the Genetic Resource Bank.

Would the $25,000 item stay in the base in future years?

Answer: Yes, the request is for a base increase. In FY 1991 the funds will be used to purchase expendable laboratory supplies. In future years, the funds will continue to be used to purchase routine supplies for the lab.

Environmental Science Program

Question 67: On page 84 of the Smithsonian's budget justification, $134,000 is proposed for 2 FTEs and for monitoring equipment and an upgraded computer system in the Environmental Science Program.

What kind of equipment and computer system upgrading is the Smithsonian proposing for the estimated $58,000?

Answer: The requested amount will permit the Smithsonian to purchase one set of monitoring equipment for San Blas to measure tide level, wind speed and direction, rainfall, sea and air temperature, solar radiation, and salinity. A large proportion of the Institution's marine research is performed in San Blas, and it currently has no ability to measure any of these key physical phenomena. The availability of these data at Barro Colorado Island and the Galeta Laboratory have proven of enormous benefit to these scientific programs, as well as providing critical data of relevance to global change.

The computer system upgrade will be used to improve the management of data generated by current and planned monitoring in the Environmental Sciences Program. The Program's current system is close to capacity. The requested increase will allow the Program to purchase a computer with 4-6 megabytes of RAM, a hard disk of at least 300 megabytes for holding and processing data, a data storage and back-up system for the computer, and a laser printer for graphics production.

Question 68: How is it associated with the two requested positions?

Answer: With the planned expansion of its monitoring program and the increasing need for high quality physical data relating to global change, the International Environmental Science Program needs an environmental engineer at STRI to oversee the installation, running, and maintenance of monitoring equipment at Barro Colorado Island, Galeta, the San Blas monitoring installation requested for FY 1991, and planned future sites, such as the Pacific marine station at Naos Island, and the cloud forest station in Fortuna. The engineer will permit the Program to coordinate fully the physical monitoring programs at its different sites, thus permitting us to perform truly integrated studies across the Isthmus, which is an important region for understanding the relative importance of natural and anthropogenic phenomena in generating global change.

The new data manager will use the computer equipment to store and process monitoring data collected by the Environmental Sciences Program. The physical and biological monitoring data base contains approximately 30 years of combined information collected at the Galeta marine station and on Barro Colorado Island. An enhanced data management program will allow IESP scientists to analyze, interpret, and publish data expediently.

Major Scientific Instrumentation

Question 69: This is the third year that the Smithsonian has come to Congress with a funding request for the submillimeter telescope array. This year's request is for $3.8 million.

What is the total cost for this project and when will it be completed?

Answer: The total cost, including personnel, for the Submillimeter Array is estimated to be $32.4 million (1989 dollars), for a continental site. As indicated in the Institution's FY 1991 budget request to Congress (P.86), construction on a site in Hawaii is estimated to cost about 25 percent more. The exact total cost will depend on the rate of inflation as well as on the choice of site. The Institution expects the project to be completed in 1996.

Question 70: What would happen to this cost if this project were delayed for 1 year? What would be the programmatic impact of this study?

Answer: We estimate that the total monetary increase due to such a delay would be over $2 million. The impact of a year's delay on the large, talented, and dedicated array staff could also be quite severe. The unique scientific contributions expected to be provided by the array could not be obtained in any other way and thus the research of the Astrophysical Observatory would be seriously reduced.

Question 71: Since you are asking for no-year funding to continue the development of the submillimeter telescope, are there some items that you are anticipated obligating at the end of the year?

Answer: No procurements are deliberately planned to occur at the end of a fiscal year; but the large and complex nature of the major contracts could easily cause this happenstance. For instance, a plan that calls for sending out a Request for Quote in March could, given even a relatively minor slip in schedule, lead to the letting of the contract being delayed to the start of the next fiscal year. Thus, it is important that we be able to conduct an orderly and economic procurement cycle, in which more than half a year's effort is not in danger of being lost because of, say, a few days' delay near the end of a fiscal year.

Question 72: Please submit for the record estimated obligation dates for the items you have listed on page 89 of your justification.

Answer: The estimated obligation dates for these main items are given below:

- Contract for the design and construction of the first two antennas (May 1991);
- Equip digital laboratory; develop intermediate frequency transmission system and phase lock distribution system (Oct 1990 - 50%, May 1991 - 50%);
- Develop computer architecture and select suitable system (ongoing throughout FY 1991);
- Start Site Development (July 1991);
- Start improvement of prototype 345 GHz receiver (Dec 1990); and
- Initiate Correlator Development (Jan 1991).

Question 73: On March 8, 1990, the Washington Post contained an article regarding the endangered Mount Graham red squirrel. As you know, Mount Graham has been chosen at the site for a new observatory complex that would include seven ground-based telescopes. The project reportedly would involve clearing 24 acres. However, some biologists contend that about 100 acres of prime red squirrel habitat would be affected. The article listed the Smithsonian Institution as a possible project participant.

Your budget justification indicates Mount Graham, Arizona, and Mauna Kea, Hawaii, are the two sites under consideration for your

submillimeter telescope array. Please tell us the status of your site selection study.

Answer: At present, we are continuing to gather and analyze a wealth of relevant atmospheric data for both sites and are building special equipment to measure the key characteristic of each site: the stability of the atmosphere, i.e., the correlation of the variations in the atmosphere's transmission of submillimeter waves, over horizontal distance of up to one kilometer. Along with these data, which should all be in hand and analyzed by early in 1991, we intend to consider for each site the environmental concerns, and the construction and operating costs for the array, in making our site selection.

Question 74: Are you preparing an environmental impact statement and, if so, when do you anticipate its completion?

Answer: No. It is premature to prepare an environmental impact statement. We must first complete our plan for the location of equipment for each site, have preliminary drawings made for each site, and then begin discussions of them with the host organization for each site. After completion of these discussions, we would address the issue of the environment impact statement. Funds are included in our project plan for this purpose.

Question 75: Are there similar issues or other concern with Mauna Kea site?

Answer: Mauna Kea, like Mount Graham, is an ecologically sensitive location that needs special care. We are greatly aided on Mauna Kea, however, in that the approved Complex Development Plan for the site anticipated the construction of several future telescopes. As a result, a preliminary investigation was completed of an area that appears, on first inspection, to be suitable for the submillimeter array. We will discuss these issues in more detail with the University of Hawaii when the preliminary site drawings, discussed above, are completed.

Question 76: When will you select a site?

Answer: Our project plan calls for selecting the site for the array no later than June 1991.

African-American Presence

Question 77: The Assistant Secretary for Museums has asked for $100,000 in FY 1991 to cover travel and per diem costs of an advisory committee on the African-American initiative. In the FY 1990 appropriation Congress included $155,000 for activities related to the African-American programs.

Last year's funding was to be used for a director and a program assistant. Have these positions been filled? If so, when? If not, when are these positions expected to be filled?

Answer: The Institution hired an Interim Program Director in January 1990. An advisory committee composed of internal and external museum professionals and scholars in African-American art and history will assist the Institution in developing criteria to evaluate candidates for the permanent Program Director position. This search process is expected to last until early calendar year 1991. The job description for a program assistant has been approved and submitted to the Institution's personnel office. It is expected that this position will be filled by the end of April 1990.

Question 78: What GS grades are these positions?

Answer: The Program Director will be a grade 16 and the program assistant will be a grade 9.

Question 79: How are the non-salary funds being used in FY 1990?

Answer: The non-salary funding will be used for research and travel costs for the Interim Director to attend conferences and visit African-American cultural and educational institutions, as well as the travel costs for the recently-appointed advisory committee, which is scheduled to meet twice in the spring, and twice in the fall.

Question 80: How will the membership of the advisory committee that is proposed in the FY 1991 budget justification be determined?

Answer: During April 1990, Secretary Adams formally appointed the individuals who will serve on this advisory committee. The advisory board is comprised of scholars, educators, business and cultural leaders from within and outside the Smithsonian. Members include historians, economists, art historians, museum directors, museum and science educators as well as lawyers and business leaders. Members were chosen because of the leadership roles they enjoy in their fields and/or because of their contributions to the field through their research or programmatic efforts.

Question 81: Will the members of this committee serve without pay?

Answer: Yes, advisory committee members will serve without pay.

Question 82: How does the Anacostia Museum fit into the African-American initiative?

Answer: The African-American initiative is engaged in exploring a mission, program and collecting policy for a national entity. The interim African-American program director is working with the staff of the Anacostia Museum to assure clarity of mission on the part of each and to discourage duplication of effort.

Air and Space Museum

Question 83: Secretary Adams, on January 30 you announced that the Smithsonian Board of Regents chose "to reaffirm its preference for Dulles as the sit for the next extension for the Air and Space Museum." The proposed annex requires Congressional authorization and funding. The annex could house aviation artifacts such as the space shuttle Enterprise, a supersonic Concorde, and the SR71 Blackbird.

It is estimated that the location at Dulles would attract 2.7 million to 4.1 million visitors per year. Is that correct?

Answer: Yes, when the extension is fully implemented (Phase 3) it is estimated that the annex at Dulles will attract 2.7 million to 4.1 million visitors per year.

Question 84: Are these estimates based on visitors who are passing through the airport on scheduled flights or are they individuals who would be making deliberate trips to visit the annex?

Answer: These estimates are based on a study suggesting that number of visitors would make deliberate trips to visit the annex.

Question 85: How many of these deliberate trips are projected to be made by residents of the Dulles area (20 mile radius)?

Answer: The estimate made was for a 25 mile radius; it is estimated that approximately 340,000 - 430,000 visits per year would be made by people living within a 25 mile radius of the NASM extension.

Question 86: The Washington Post stated "Smithsonian and Virginia officials involved in promoting the Dulles selection said they expect a rail link to Dulles to be in place by the time the Air and Space annex is complete." What assurances do you have that public transportation could be in place?

Answer: At the Institution's last meeting with representatives from the Commonwealth of Virginia, they stated that there is a long range plan for rail service to Dulles, to be in place by the time the three-phased construction of the Air and Space Extension is complete. The State also plans to provide a bus link with the nearest existing Metrorail station, to be operative by the time the Phase I facility opens to the public.

Question 87: What are your projections for visits to the Air and Space Annex with, and without, a rail link to the city?

Answer: Current projections for visitation to the Air and Space Extension at Dulles (at the completion of Phase III) are estimated to be 3.3 to 4.1 million visits with a rail link; and 2.7 to 3.3 million visits without a rail link.

Question 88: Would you explain what cost-share arrangements are proposed with the State of Virginia?

Answer: The state's contribution of the infrastructure has been valued at approximately one-fourth of the total construction cost of phase I. Cost sharing arrangements for the construction of all three phases is still under consideration by the state. One potential model for this cost sharing arrangement is the fund matching agreement approved for the construction of the National Museum of the American Indian (i.e.: 1:2 match). The Institution expects to receive a formal proposal from the State of Virginia in April.

National Museum of Natural History/Museum of Man

Question 89: The Smithsonian is proposing 2 workyears and $100,000 for establishing an Associate Director for Public Programs at the National Museum of Natural History/Museum of Man. Your budget justification (page 105) states "the goal of coordinating the efforts of the offices of education and exhibits under one associate director is to create a national model for public education in the natural sciences and anthropology that will build on the strengths of the Museum's collections and research interests and the size and diversity of the Museum's audience."

Why wouldn't the public education function fall under the Assistant Secretary for Public Service?

Answer: The activities of the National Museum of Natural History/Museum of Man's Office of Education are, for the most part, exhibit-oriented and exclusively focused on sciences within the specialized museum. The Education staff enhances the interpretation of exhibits in the National Museum of Natural History through related in-house and outreach events and programs. This includes instructional tours of and curriculum development about the permanent and temporary exhibits, the Friday Film and Lecture Series, the Naturalist Center and Discovery Room. Thirty-five thousand school children came to the Museum of Natural History for special programs in 1989, while outreach programs taken to local schools reached another 16,000 students. A new Native American project organized by the Office of Education is exploring new ways to involve native peoples with the presentation of their own cultures. With the need to increase scientific literacy, the use of exhibits to educate the public better about science and about the impact of humans on the environment makes the link between the exhibit function and the education function a necessarily strong one.

The central Smithsonian service units, including the educational offices that report to the Assistant Secretary for Public Service, are designed to supplement these museum-specific needs. They serve an important coordinating function between museums within the Smithsonian, and between the Smithsonian and cultural and educational institutions in the larger external community.

Question 90: What interaction would the proposed Associate Director for Public Programs have with the Office of Exhibits Central?

Answer: The Museum's Office of Exhibits is a client of the Office of Exhibits Central (OEC). OEC provides support in areas where the Museum lacks the expertise, such as modelmaking and complex plexiglass work. When the Museum produces an exhibit, its Office of Exhibits must determine the best utilization of the resources available. Many projects can be done in-house, some jobs are best done by OEC, and some must be contracted out. Large exhibits often require a combination of all these options. OEC is basically a service organization for the many Smithsonian museums--particularly those without their own exhibition capabilities, such as Smithsonian Institution Traveling Exhibition Service.

Question 91: Do other museums have Associate Directors for Public Programs. If so, which museums?

Answer: Within the Smithsonian, we have two museums that have Assistant Directors who supervise both exhibitions and education: The National Portrait Gallery's Assistant Director for History and Public Programs, and the Freer/Sackler Galleries' Assistant Director for Exhibitions and Facilities. Two more Smithsonian organizations have this position under consideration or plan to establish one (the National Zoological Park and the Cooper-Hewitt Museum). The National Museum of American History has an Assistant Director for Public Programs which includes education, but not exhibition production.

In the natural history museum field, there are two major organizations with such a newly-created position: the Field Museum of Chicago and the American Museum of Natural History in New York City.

Floating Laboratory

Question 92: The Institution is proposing to construct a research vessel for mobile research on marine systems. It would replace the present research vessel, Benjamin.

The Statement of Managers which accompanies the Conference Report on H.R. 2788, the FY 1990 Interior and Related Agencies Appropriations Bill, requested the Smithsonian to look for ways to bring the total cost down under the current estimates for the vessel. A report was expected prior to the FY 1991 hearings. Yesterday a letter, in lieu of the report, arrived which was intended to bring us up to date on the floating laboratory project.

Why hasn't such a report been submitted to the Subcommittee?

Answer: STRI received funds for a design study for the floating laboratory in the FY 1990 budget. STRI solicited bids for the study in November 1989. The firm chosen was Rodney Lay and

Associates. A deadline was set at March 15, 1990 for the design package. This was the earliest deadline STRI was able to obtain.

The U.S. military action in Panama in December and January disrupted communications and travel, and the emergency situation resulting from the taking of Smithsonian hostages and the looting i the city temporarily disrupted normal STRI operations.

Fortunately, STRI suffered no casualties or damage to its facilities as a result of these events. However, normal operations of the Institute were disrupted for several weeks. Representatives of Rodney Lay were unable to travel to Panama at the scheduled time, and review of preliminary documents by STRI staff was delayed.

Lay was finally able to visit STRI on March 5 and has now completed the study. STRI received it in early April and has delivered copies to the Subcommittee. The study includes an analysis of cost-reduction options. The letter to which the Subcommittee has referred contained a summary of information available at the time.

Question 93: What are the results of your cost-reduction studies to date?

Answer: STRI has explored alternatives to the construction of a new research vessel and options for reducing the estimated cost of a newly constructed vessel.

Alternatives to construction:

We looked at several possibilities and found none acceptable.

We searched for an appropriate used research vessel and found none available. These vessels are specialized and often come on the market only towards the end of their useful life, if at all.

Yachts of the size we require lack open deck space and room for the machinery, equipment and storage needed for marine research. Based on our experience with conversions of four smaller yachts, we have concluded that refitting a larger pleasure craft would yield only a larger "floating hotel" inadequate to support our current and growing program of marine research.

In January, 1988, STRI initiated a search for an appropriate vessel from Federally seized properties. No suitable vessel has been found. Seized vessels tend to be either small, high-speed pleasure craft or commercial vessels too large to enter or maneuver in shallow coastal waters over coral reefs and too expensive to operate and maintain.

In brief, it is STRI's understanding that existing hulls of the size required are designed to carry persons and light cargo loads at high speeds. The design and performance characteristics of these hulls make them unsuitable as research vessels. Further, STRI interviewed persons at U.S. universities and research institutions who are responsible for the operation and administration of the few research vessels that have been constructed on such existing hulls.

All concur that their vessels lack the stability and performance characteristics that we require. Finally, expected cost savings from using an existing aluminum hull design would be no more than $60,000.

Construction costs:

STRI has asked that Rodney Lay obtain estimates of construction costs for the vessel according to the design features we requested, and also to explore ways to reduce the cost of the vessel below the estimates. The construction cost estimate is $2,035,000, based on pre-bid quotes. However, we expect that we could reduce the construction cost to $1,800,000 without significantly compromising the operating characteristics of the vessel.

As the letter to the Subcommittee stated, the largest reduction in construction costs would come from using steel rather than aluminum in the hull construction, but the consequent increase in operational and maintenance costs would not make this approach cost-effective overall.

Reducing the size of the vessel is also not a viable alternative. Reducing the size sufficiently to result in cost reduction could not be done without significantly compromising design characteristics for sleeping quarters and workspace.

The Smithsonian will seek additional funding from other sources for the difference between the projected cost of the project and the funding requested from the Congress. Two alternatives that will be explored are private fund-raising and a request for reprogramming within the same authorization. The U.S. Navy is planning additional activities in the Galeta area that may reduce the need for STRI to supply infrastructure support when its builds the new Galeta laboratory.

Other potential construction savings were examined but also found not to be cost-effective.

Question 94: Is the $1,550,000 requested in this budget lower than the previous estimates?

Answer: The FY 1991 request for the floating laboratory is based on the preliminary estimate of $1.7 million for design and construction costs. As part of the FY 1990 appropriation, Congress provided $150,000 for the design costs of the vessel. For FY 1991, the Institution is requesting the balance of the funding required to reach the $1.7 million total ($1,550,000).

Question 95: What modifications were made to the original estimates to arrive at the $1,550,000?

Answer: The FY 1991 request does not reflect any modifications to the preliminary estimate of $1.7 million. As explained in the previous question, the request for FY 1991 is the original estimate minus the amount appropriated for design. It therefore reflects the same estimate as the previous request, since design costs were built into the original estimate. The planning study will provide more detailed information on which to base a new cost estimate to replace the preliminary estimate of $1.7 million.

Columbus Quincentenary Programs

Question 96: Mr. Adams, the Smithsonian Institution is requesting $1.5 million for the Columbus Quincentenary Programs. In FY 1990 you received $1.2 million.

What have you been doing with the money that we have given you in the past for Columbus Quincentenary Programs? For the record, please submit a list of projects that you have completed to date.

Answer: The Institution is planning and developing a wide range of programs and activities to commemorate the arrival of Christopher Columbus in 1492 during the period 1987 through 1993. Listed below are the programs and projects presented or completed so far.

QUINCENTENARY PROGRAMS COMPLETED

EXHIBITIONS:

National Museum of American History:
- A Chinese Puzzle in California: Foreign Trade and Native Americans Before 1600, September 1987
- Commerce and Conflict: The English in Virginia, 1625, April 1988
- Kiva, Cross, and Crown at Pecos Pueblo, April 1989

SYMPOSIA:

Office of Folklife Programs:
- Seeds of the Past, September 1988
- Seeds of Commerce, March 1989

Office of Quincentenary Programs:
- Americans Before Columbus: Ice Age Origins, September 1987
- Musical Repercussions of 1492, March 1988
- Violence & Resistance in the Americas: the Legacy of Conquest, May 1989

National Museum of American History:
- After Columbus: Encounters in North America (series) Highlighted archaeological and ethnohistory research focusing on Spanish, French, English, and Dutch contact with American Indians, September 1987,
- Explored American Indian perspectives on European Colonization, April 1988
- Examined interactions between Spaniards and the Indians in the Spanish borderlands during the sixteenth to eighteenth centuries, April 1989

National Museum of Natural History:

Latin American Archaeology, 1988

Disease and Demographics, November 1989

PUBLICATIONS:

Smithsonian Institution Press:

Artifacts of the Spanish Colonies, by Kathleen Deagen, 1987

Monte Verde, by Tom Dillehay, 1989

Tropical Renaissance, by Katherine Manthorne, 1989

Columbian Consequences, Vol. I, edited by David Hurst Thomas, 1989

OTHER ACTIVITIES:

Office of Folklife Programs:

Festival of American Folklife Program, The Caribbean: Cultural Encounters in the New World, June 1989

Office of Quincentenary Programs:

Newsletter, "The New World," March 1990

Smithsonian Resident Associate Program:

Performances, readings, film screenings, seminars and workshops

Smithsonian National Associate Program:

Workshops in Chile, ongoing

Question 97: How many FTEs are you requesting to go with the $1.5 million?

Answer: As part of the total funding of $1.5 million for Quincentenary Programs requested in the FY 1991 budget, funding is included for 14 full-time positions and 1 part-time position, resulting in a total of 14.5 workyears.

Question 98: Is the $1.2 million, which was appropriated last year, part of the FY 1990 base? What about funding from prior years?

Answer: The FY 1990 base of $1.2 million for Quincentenary Programs represents the cumulative total of program increases approved in the FY 1987 through FY 1990 budgets.

Question 99: What has happened to the individuals from preceding years upon completion of other phases of the Columbus Quincentenary Programs? Were their assignments multi-year projects?

Answer: The positions approved for Quincentenary programs during FY 1988 through FY 1990 continue to be needed to research, develop, and implement the specific programs for which they were hired. Their assignments are multi-year in nature, continuing through the duration of the Quincentenary period.

Question 100: Does the Smithsonian move people from project to project when an initiative is completed and a new initiative approved and funded? Can you give us some examples?

Answer: From time to time, as needed to respond to programmatic changes, Smithsonian bureaus may reassign staff from project to project, or may add additional new projects to the ongoing responsibilities of current staff. One current example is that of the Quincentenary itself. In addition to the positions provided specifically for the Quincentenary, other current staff in several Smithsonian bureaus will also be involved in Quincentenary projects. At the Museum of Natural History, for instance, exhibition staff who produced the "Magnificent Voyagers" exhibition are currently working on Quincentenary programs. At the Air and Space Museum, the curator for the "Looking at Earth" exhibit is currently assisting in the development of the Satellite Atlas of the World. At the Office of Folklife Programs, program development for its series of "living exhibitions" on the National Mall, symposia, scholarly programs, and publications has so far been provided by existing staff. In fact, the FY 1991 budget request for the Office of Folklife Programs seeks funding to hire a program coordinator to take over the responsibilities of program development from existing staff as the demands for this assignment expand to a full-time requirement. In this case, as in other positions requested for special programs such as the Quincentenary, staffing requested specifically for these programs represents the personnel required to undertake these programs above the level of current staff participation.

Question 101: Can we expect to see a decrease in your FY 1993 budget request at the conclusion of this initiative?

Answer: Based on the preliminary budget estimates for future years included in the Institution's Five-Year Prospectus, FY 1991-FY 1995, the Institution intends to request a final increment in the level of funding for Quincentenary Programs in FY 1992, followed by a decrease in the level of funding for Quincentenary Programs in FY 1993. Some Quincentenary Programs, however, such as at the National Portrait Gallery, are expected to extend beyond FY 1992. Moveover, as described in the FY 1991 budget request (page 238-239), the Institution plans to request the retention of part of the Quincentenary funding to establish a permanent Hispanic-American program for the "Institute of the Americas" after the Quincentenary:

> "As another long-term initiative developing out of the Quincentenary, the Smithsonian is looking into the possibility of establishing an entity with the provisional title of "Institute of the Americas," which should facilitate a scholarly exchange concerning intellectual, cultural, ecological and other issues that affect this hemisphere. This issue-oriented approach can help to solve such problems as the exploitation of our natural and cultural resources. Non-Smithsonian scholars and policy makers will come to the Institution to pursue research in these fields and to share their ideas and perspectives with Smithsonian staff..."

Museum Support Center

Question 102: The Smithsonian Institution has a Museum Support Center located in Suitland, Maryland. The Center provides state-of-the-art facilities for the conservation and preservation of museum objects, conservation training, and the storage of museum collections. The storage wing consist of four storage pods, each approximately the size of a football field and 28 feet high.

How many storage pods are currently being fully utilized?

Answer: Because of the problems earlier encountered in the purchase and installation of collections storage equipment, none of the four storage pods at the Museum Support Center is currently fully utilized. In Pod 3, reserved for "wet" collections storage equipment for specimens preserved in alcohol, approximately 25 percent of the space is presently occupied. In Pod 3 and the other three pods, where construction of the concrete decking has recently been completed, full utilization will depend upon the funding requested in FY 1991 and following years for the purchase of collections storage cabinets and the "high-bay" storage system for very large objects. Based upon current funding availability, completion of the purchase of collections storage equipment and the relocation of collections to the Museum Support Center will not be possible until after the year 2000.

Question 103: What will it take to make the storage center fully operational?

Answer: It is projected to take between $24.1 million and $31.4 million to complete the purchase and installation of the collections storage equipment at the Museum Support Center. It will take approximately $5 million to complete the "Initial Move" of collections to the MSC. The Institution's preliminary estimate of funding requirements for the "Growth Move" is currently projected to be approximately $2 million (excluding escalation), based on the Smithsonian experience with the "Initial Move." For Museum Support Center Operations, annual administrative and facilities maintenance support for the MSC at full operations will require an annual base of approximately 50 workyears and $1.5 million. (All amounts reflect 1989 dollars.)

Question 104: Do you have adequate storage facilities for your collections?

Answer: The Smithsonian does not have adequate storage facilities for all of its collections. Most of the Institution's storage facilities are overcrowded, dirty, asbestos insulated and/or poorly controlled with regard to temperature and humidity conditions. Improvements of these conditions have been made in some locations, such as in the Museum of American History building, through the use of Major Capital Renewal and Modifications and Alterations funds. Plans are in process to make improvements in other locations, such as in the Museum of Natural History building. In spite of such improvements, however, the Institution also has a severe need for additional space for storage of its collections.

Designed in 1979 to address the highest priorities of the Institution's collections storage space needs at the time, primarily that of additional space for the collections of the Museum of Natural History, the Museum Support Center's full potential as a state-of-the-art facility has been greatly hindered by the problems encountered in the equipping of the storage pods. Although great progress has been made in FY 1989 and FY 1990 to resolve these problems, the MSC alone will not solve the Institution's storage space needs, even when it reaches full utilization.

The Institution has been gathering and analyzing data on the collections storage needs of the collecting bureaus and offices of the Smithsonian, including the Air and Space Museum, the Museum of American History, the Museum of Natural History, the art museums, the Smithsonian Institution Libraries, and the Smithsonian Institution Archives. The Institution is currently projecting space needs for these collections for the immediate future, the next twenty years, and the next fifty years.

Question 105: Where are your new collections stored when they are received?

Answer: When new objects added to the Smithsonian collections are received, they may be stored in a variety of storage locations. A few collection storage areas still have a small amount of room available to store newly-acquired objects. Most other new acquisitions are stored in areas that were not originally designed for collections storage and most often are without appropriate environmental controls. These areas include such areas as hallways, attics, basements, offices, closed-down exhibit galleries, and rental space. The other storage alternative for newly-acquired objects is to overcrowd current storage areas -- for example, to place additional objects into an already-filled storage drawer. This approach to storage of new objects often causes damage to both the new and the existing objects because of the resulting severe compression.

Question 106: I understand that your request to OMB for the Museum Support Center was $11 million and it was cut back to $4.3 million. Is that correct?

Answer: That is correct. The Office of Management and Budget did not allow any of the requested increases for FY 1991. The Institution's budget request to OMB would have provided a total annual level of $8 million for the purchase of MSC collections storage equipment; a total annual level of $1.9 million for MSC Move activities, including the Asbestos Evaluation project; and a base of $1.3 million for MSC Operations.

With no programmatic increases allowed, the FY 1991 budget request to Congress includes a total annual level of $2.8 million for MSC collections storage equipment; $0.4 million for MSC Move activities, including the Asbestos Evaluation project; and a base of $1.1 million for MSC Operations.

Question 107: What would you do with the additional $6.7 million that was in your budget request to OMB?

Answer: If the Institution were to receive the additional $6.7 million in funding for MSC, $4.942 million would be used to procure needed collections storage equipment; $1.504 million to expand MSC Move activity that is possible because of the number of storage cabinets that were installed in FY 1989 and are being installed in FY 1990; and $0.26 million for expanded computer support for MSC Operations.

Question 108: Storage is intrinsic to museum operations. Would this be a high priority area for you if Congress were going to add funds to your budget?

Answer: The procurement and installation of all of the MSC collections storage equipment and the relocation of collections to the MSC is a very high priority for the Institution. The full utilization is vital to the Institution's future ability to protect its collections. Not only is it critical to relocate the collections to the MSC to prevent further deterioration of them, resulting from overcrowding and poor environmental conditions in their present storage locations, but their removal is also critical to permit other Institution projects to proceed. The relocation of collections to the MSC from many Museum of Natural History building storage areas is critical for the timely and efficient progress of the Museum's Major Capital Renewal Plan to replace its mechanical equipment and remove/encapsulate asbestos insulation. Any delay in the move of collections to the MSC will have a domino effect on, and will delay, the Museum of Natural History's Major Capital Renewal Plan.

New Accounting System

Question 109: Last year the Congress provided $434,000 and 11 FTEs to the Office of Accounting and Financial Services for the Smithsonian's new accounting system. This year's justification requests 13 FTE's and $505,000 for the Office of the Treasurer. Page 251 of your justification states "the requested funding would support the implementation of a new Financial Accounting System that will produce more timely and accurate financial information."

Is this the same system that we funded last year?

Answer: Yes, this is the same system that we requested funding for last year. The Smithsonian's current accounting system is 13 years old with some elements even older. Software packages for major elements of the new accounting system were purchased last year with Federal funds. The new software was used first during FY 1990 in the development of a new Personnel Cost Projection System. This system translates Smithsonian payroll data generated by the Department of Agriculture's National Finance Center into usable form for account reconciliation and budgeting. An enormous amount of work has also been completed with respect to documentation of the old accounting system (necessary for conversion), establishing requirements for the new system, testing the new software and establishing policies and procedures. Shortly, with the aid of outside consultants we will begin implementation of the general ledger package. Parallel testing will occur in late FY 1990 and during FY 1991, followed by implementation of funds control, accounts payable, and purchase order modules.

Question 110: Half of the FTEs requested for last year were to be temporary accounting technicians who were to take you through the "temporary workload increase." Why doesn't your justification reflect a decrease, rather than an increase?

Answer: Last year 7 temporary positions were requested. As a result of Congressional action, 4 of the temporary positions were eliminated. In addition, one-quarter year funding was cut from both the permanent and remaining 3 temporary positions. Gramm-Rudman cuts further cut into the increases. As a result of the above as well as the current implementation schedule, it will be necessary to maintain the three temporary positions at least through FY 1991. Our intention to do so should have been indicated in our justification.

Please note that the other 8 positions in FY 1990 were permanent. These positions are required not only to assist in the implementation stage but also to maintain the new more complex system once implemented. The new positions in FY 1990 and those required in FY 1991 reflect the fact that the new system will offer a needed level of internal controls, financial data and service to the bureaus not currently being provided.

Question 111: It would seem that a new, automated accounting system could be operated with fewer employees than needed for the current system and would be more efficient. Again, why is an increase requested again this year?

Answer: A new accounting system is necessary because the old system can no longer meet the demands given the volume of data currently being processed. In addition, changing external and internal requirements must be provided for. The new system will be more efficient than the old but it will also provide more controls, data and service than the old. The old system was implemented in 1977 to accommodate Federal Salary and Expense appropriations of $87 million with some modest expansion. As of 1990, our Federal appropriation is $225 million with much more detailing and subaccounting required.

A similar increase in volume and complexity has occurred in the Smithsonian's Trust fund budget. Comparable increases in staffing and support are being provided by Trust funds for the new accounting system.

It is likely that for certain processes the cost will go down. For example, many reports will be computer generated rather than manually prepared. As a result of interactivity of systems, data will not have to be entered more than once. This will all save money, but the savings will be offset in meeting expanded requirements, eg. those set forth by the Federal Joint Financial Management Improvement Program (JFMIP).

We must provide for current and long term needs with respect to solid internal controls, improved management information and the sheer volume of financial activity not currently handled by the existing system.

Question 112: How many of the 13 FTE's that are requested this year would be permanent employees?

Answer: All of the 13 FTE's are permanent positions. While they support the implementation of the new accounting system, they meet permanent, long-term needs and are not specific to a short-term implementation effort.

Question 113: If these are short-term activities, why are permanent employees being hired?

Answer: As explained above, they are not short-term activities.

Question 114: When can we expect to see a savings from this new system?

Answer: It is unlikely that there will be direct reductions to levels of funding for accounting services. A given process may cost less per transaction, but increased numbers of transactions will most likely not permit reductions without loss in service. Many of the anticipated savings and efficiencies will be manifested in other parts of our budget. Improved controls may cut losses for many of our activities. More timely financial data will lead to more efficient utilization of resources for all programs.

Office of Personnel Administration

Question 115: Nine additional work years and $426,000 are proposed for personnel administration activities. How many people do you currently have?

Answer: The Office of Personnel Administration has 55 civil service employees and 26 trust employees for a total of 81 persons.

Question 116: What will these additional people do and why are they necessary?

Answer: Five of the requested new staff would provide core support for the management and operation of the Delegated Examining Unit under authority given to us by the Office of Personnel Management (OPM). In effect, this authority allows the Institution to serve as OPM's agent to examine for positions of special relevance to the Smithsonian, such as curatorial and exhibitions staff, museum scholars, scientists, guards and other occupations.

Exercise of this authority will greatly enhance our ability to fill positions quickly and simultaneously target sources of minority applicants heretofore missed by OPM registers. The other four positions are meant to strengthen day-to-day personnel operations and provide the broad range of human resource services demanded by the Institution's managers and employees. Further, in order to cope with changing workforce demographics, the Smithsonian's personnel system must develop better strategies for attracting, hiring, training, motivating and keeping talented people.

. Question 117: How was their need determined?

Answer: The need for five persons for the Delegated Examining unit is based on OPM standards governing the authority. Three personnel staffing specialists are needed to rate, rank and refer applications for almost 20 occupational groups. One personnel assistant is required to ensure the cases are properly documented, statistics are maintained and reports are produced for OPM review. One clerical position is needed for filing and typing support. Finally, one of the three personnel staffing specialists will also serve as the supervisor of the unit, overseeing staffing activities and ensuring quality work performance.

The need for the other four positions is based on assessments both by Office of Personnel Administration management and by their customers that the Office is inadequately staffed either to meet daily requirements or to assume the proactive role expected by its many clients. In its May 1989 report to the Institution, the National Academy of Public Administration stated "In reviewing the operations of OPersA, NAPA was acutely aware of the difficulty of providing personnel services to an organization that is highly decentralized, has a broad and general mission (and) has more than 200 job categories -- ranging from the scholarly to the business world." NAPA went on to cite the high ratio of employees to be served to the number of personnel staff as reported in the FY 1991 budget justification on page 254. The addition of 2 personnel management specialists and 2 personnel assistants will help to reduce that high ratio.

Payroll Base Deficiencies

Question 118: Your have identified a $344,000 adjustment to the base called "payroll base deficiencies." The justification for this adjustment states that some of the smaller offices have experienced a gradual erosion of base funding as a result of low turnover, staff promotions, pay increases, and/or the occasional need to fill vacancies at higher grades to attract the best available candidates. On page 30 of your budget justification, you have identified 4 organizational units out of 35 as having deficiency problems.

How many FTEs are in each of the four organizations?

Answer: For FY 1991, the Smithsonian has requested additional funding to address payroll base deficiencies of nine organizational units (incorporated in 4 different line-items). The following chart provides the number of workyears for each:

	FTE
Assistant Secretary for Museums	
--Office of the Registrar	3
Assistant Secretary for Public Service	
--Immediate Office	6
--Telecommunications	5
--Public Affairs	13
Smithsonian Institution Press	29
Administration	
--Office of the Inspector General	14
--Office of the Treasurer	2
--Financial Management and Planning	5
--Office of Equal Opportunity	8

Question 119: Provide the Subcommittee with an explanation of why there is not flexibility to make adjustments for each of the four areas.

Answer: Each of these budgets has very limited or no other object class funds to absorb the payroll base deficiency. In fact, the situation of these bureaus deteriorated during FY 1990, as what little other objects funding they had was reduced to absorb the FY 1990 Gramm-Rudman-Hollings reduction. Two of these nine bureaus (the Office of Telecommunications and the Office of Financial Management and Planning) currently have no Federal other objects funds at all. In three other bureaus (the Office of the Registrar, the Office of the Inspector General, and the Office of Equal Opportunity), the requirement to absorb their payroll base deficiencies would totally eliminate their limited other objects funds in FY 1991, while two other bureaus (the immediate Office of the Assistant Secretary for Public Service and the Office of the Treasurer) would be left with less than $10,000 in Federal non-personnel funds. For the remaining two bureaus (the Office of Public Affairs and the Smithsonian Institution Press), the absorption of unfunded payroll costs would reduce the funding available for non-personnel costs by approximately 50 percent.

Special Salary Rates for Security Guards

Question 120: At last year's hearing we discussed the Smithsonian's request to the Office of Personnel Management for special salary rates for security guards. It is our understanding that you received approval for new salary rates last May.

You told us last year that the turnover rate for 1987 was 30% and for 1988 it was 23%. Have the new rates helped with guard turnover frequency? What is the present turnover rate?

Answer: Yes, we believe that the special salary rate has helped to reduce guard turnover frequency. The overall turnover rate for FY 1989 was 22%. The special rate for guards in the Washington, D.C. area was approved effective March 12, 1989, about half-way into FY 1989. Perhaps a more telling statistic is the comparison of the proportions of guard resignations in which the stated reason for leaving the position was the low salary level. In FY 1989, 40% of guard resignations were due to low salary. In FY 1988 and FY 1987 the figures were 43% and 57%, respectively.

Question 121: Are there other means of recruiting and retaining security guards?

Answer: The Smithsonian uses conventional recruitment methods for guards, e.g., vacancy announcements and occasional paid-advertising. The Office of Personnel Management has delegated examining authority for guards to the Smithsonian, thus streamlining the process somewhat. However, competition for security guard positions is restricted by law to persons entitled to veterans' preference as long as such applicants are available for appointment. The Office of Protection Services has vigorously recruited retired and soon-to-be-discharged military personnel at local job fairs. We have identified ourselves as a viable employer to local college and university placement officers offering part-time employment opportunities for college students. We have also considered the use of docents and volunteers for providing security in the galleries.

Emergency Repairs of Buildings

Question 122: Your justification (page 285) requests $200,000 for emergency repairs throughout the Smithsonian Institution. What was the level of emergency repairs in FY 1989? Please provide a list of the FY 1989 repairs, including a description of each project, for the record.

Answer: In FY 1989, the Institution spent $92,800 of the $100,000 appropriated for emergency repairs. The remaining amount was carried over for use on emergency repair projects during the current fiscal year.

FY 1989 funds appropriated for emergency repairs were spent on the following projects:

- $24,000 to rent and erect scaffolding needed to repair fallen plaster in the Rotunda of the Museum of Natural History

- $11,600 to repair fallen plaster on the walls and ceiling in the Great Hall, Commons and Lounge areas of the Smithsonian Institution (Castle) building

- $34,000 to correct hazardous air exhaust conditions at the American Art/Portrait Gallery building
- $2,100 for replacement of irreparably corroded chill water

coils serving library and collection storage areas in the Museum of American History

-- $21,000 for repairs to public elevators at the American History building

The Smithsonian uses funding from the emergency repairs category only as a last resort. The Smithsonian often funds a number of emergency repair requirements by redirecting small residual balances in the R&R account remaining after completion of other repair projects. Some work related to repairs of an emergency nature is also done as part of R&R projects in other categories. The Office of Plant Services also uses Salaries and Expenses funds, if available, to make many of the less costly emergency repairs that it identifies in the course of routine inspection. Since much of this work is done as part of other projects, there is not a complete listing of emergency repair work funded by other sources.

It is important that the Institution retain an adequate level of funds available in the R&R account specifically earmarked for emergency repairs, to avoid the risk of not being able to replace a piece of failed equipment or make a critical safety correction without deferring other much needed work.

Question 123: How much have you spent for emergency repairs in FY 1990 to date?

Answer: Through the end of March 1990, $41,000 has been spent in FY 1990 from the emergency repair category. Projects included repair of a damaged vacuum condensate unit and pumps at the American History building, replacement of worn out air handler coils at the Freer Gallery building, and electrical repairs at the Smithsonian Institution building. The Office of Design and Construction expects to obligate an additional $155,000 for emergency work in the next several months.

Heating, Ventilating, and Air Conditioning Systems

Question 124: Explain what projects would be included in the $200,000 for the HVAC Controls Upgrade under Miscellaneous Locations (page 285).

Answer: The major HVAC Controls Upgrade Program began during FY 1986, and involves the conversion of the Institution's energy management and facilities monitoring systems from the two old and antiquated IBM System 7 computers to a single high capacity DEC computer which was installed to control systems in the Quadrangle. This conversion reduces the time spent by the Institution's Office of Plant Services (OPlantS) staff in touring through the buildings to check the equipment and improves control environmental conditions in the facilities. The software being used for the conversion features direct digital control, which allows OPlantS staff to correct a number of malfunctions and reset alarms from a computer console in a central location rather than visiting the site to make the adjustment.

Through FY 1989, the Office of Plant Services staff completed conversions of the existing systems at the Hirshhorn, Arts and Industries, Smithsonian, Quadrangle, Renwick, Service Center (at 1111 No. Capitol Street), and Greenhouse buildings. Additionally, the new restaurant and the main lighting system at the Air and Space Building were added to the new system. OPlantS is converting the American History Building in conjunction with the phased major capital renewal project. OPlantS staff has also converted the energy management and part of the facilities management system for the Natural History Building. During FY 1990, the staff will convert the Freer Gallery systems and the systems at the American Art and Portrait Gallery Building.

OPlantS will use the FY 1991 funds to complete the total conversion of these systems at the Air and Space Building and to continue the conversion of numerous critical facility monitoring alarms at the Natural History Building. The Institution will use the requested funds to purchase the necessary equipment and software, and Office of Plant Services staff will perform the installation. The Institution expects to request funding in FY 1992 and 1993 to complete the conversion of facilities systems to direct digital control.

Asbestos Removal

Question 125: How is the Smithsonian's program of asbestos removal proceeding?

Answer: The Smithsonian has implemented an effective policy for the protection of staff, volunteers, collections and the visiting public from asbestos exposure. The policy is based on current Occupational Safety and Health Administration (OSHA) regulations and Environmental Protection Agency (EPA) guidelines governing asbestos. The policy supplements a rational and systematic plan for the management of asbestos-containing materials in all Smithsonian facilities. This plan includes provisions for the identification of damaged and friable asbestos-containing materials, worker training, medical surveillance, the use of personal protective equipment, and work practice controls.

Since FY 1981, the Congress has provided a total of $5.0 million for asbestos abatement at the Smithsonian. The Institution has conducted asbestos removal or encapsulation projects at a number of facilities, including the American History, Natural History, American Art and Portrait Gallery, Arts and Industries, Smithsonian Institution (Castle), Freer Gallery, and Renwick Gallery buildings and the Cooper-Hewitt Carnegie Mansion.

In FY 1989 the Smithsonian contracted for a complete Institution-wide assessment of asbestos abatement needs. The contractor has already completed surveys in Natural History and American History buildings and will complete surveys of five more facilities by the end of calendar year 1990. The survey of the entire Institution will be complete by the end of FY 1991. The contractor will identify asbestos locations, assess and prioritize needs for abatement activities, and develop a schedule for removal or containment and an estimate of the annual cost. This information will form the basis of future budget requests.

For FY 1990, $500,000 was appropriated for asbestos work and expenditures to date amount to nearly $490,000. The balance will be used for additional work before the end of the fiscal year.

Question 126: When do you anticipate completing the program?

Answer: Current asbestos abatement efforts fall into two categories. The Priority Abatement category includes all those areas and locations where asbestos-containing materials are severely damaged and deteriorated and require expeditious abatement actions to protect staff and visitors from exposure. In addition to recommending corrective action at each asbestos location, the survey contractor mentioned above will develop a schedule for removal or containment of the asbestos in this category as well as an estimate of the annual funding requirements. The Smithsonian expects that the survey will identify substantial remaining work in this asbestos abatement category beyond the work currently funded, and it is most likely that this work will take a number of years to complete.

The Opportunities for Abatement category includes those areas or locations where asbestos-containing materials are present in walls, etc., but are not in urgent need of abatement. The asbestos survey will identify those locations where other repair or renovation work is scheduled, and the Institution will plan to complete the removal or encapsulation of the asbestos in conjunction with the other work. The abatement of the asbestos in these areas is often necessary before the actual repair or renovation work can be accomplished. Abatement in this category will generally only be undertaken as part of other projects, unless it becomes deteriorated or damaged.

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

Infrastructure Needs

Question 127: During last year's House hearing, Mr. Yates requested that you estimate the needs that you consider to be of primary importance to the Smithsonian. The record indicates you provided a very complete list of unfunded priorities from the vantage point of central management. The list totaled $4.037 million.

How does the list of infrastructure needs included in the FY 1991 budget compare to the list provided to the House during the FY 1990 process?

Answer: The list of infrastructure needs included in the FY 1991 budget justification is much more extensive and comprehensive than the list of unfunded FY 1990 needs submitted at the request of Mr. Yates last year. Of the original list of 33 items provided during the FY 1990 hearing process, Congress approved additional funding during the FY 1990 appropriations process for 11 of these unfunded requirements and one item was covered by base funding. The Institution's FY 1991 budget request seeks funding for two more items on the FY 1990 list. In addition, two other items on the FY 1990 list, which were not funded, are now identified in the Cultural Pluralism category and not included in the infrastructure category. The remaining 17 items from the FY 1990 list are all included in the more comprehensive FY 1991 list of infrastructure needs. The FY 1991 list of infrastructure needs contains approximately 250 other critical items not on the FY 1990 list that had been identified by Smithsonian bureaus during the FY 1991 budget formulation process, as well as some pan-Institutional infrastructure needs identified by the Assistant Secretaries.

Reinstallation of Permanent Exhibit Halls

Question 128: One of the items included in the list of infrastructure needs list is $5.2 million per year for the Reinstallation of Permanent Exhibit Halls. To begin addressing this need, you have requested an additional $900,000 in FY 1991 for two museums.

These funds will be used by the National Museum of Natural History and the Freer Gallery of Art, and will allow them to increase their exhibition base funding for an extended program of phased replacement of the oldest exhibit halls.

The budget indicates you need $5.2 million per year to address this problem.

What is the total estimate for this effort?

Answer: The total estimate for exhibit reinstallation for the Museum of Natural History and the Freer Gallery of Art are presented below. The funding requirements for the other museums represented in the $5.2 million infrastructure backlog (indicated in the next question) are currently being identified as part of the FY 1992 budget formulation process.

National Museum of Natural History: The total cost of the complete renovation of the National Museum of Natural History's 30 permanent exhibit halls, most of which are decades old and contain outdated subject matter, is currently projected to be $150 million. The Museum requires a total annual Federal base increase for exhibit renovation of $2.5 million to speed up the renovation of its seriously outdated exhibit halls to a pace of at least one completed hall per year, each of which costs approximately $5 million. The Museum intends to raise another $2.5 million per year from private sources to match the Federal support. This funding level will also enable the Museum to coordinate the exhibit renovation schedule with the Heating, Ventilating, and Air Conditioning (HVAC) renovation and the move of the collections to the Museum Support Center.

Freer Gallery of Art: The total cost of the permanent reinstallation at the Freer Gallery is estimated to be $3 million, with one-time Federal funding of $1.5 million to be matched by $1.5 million in funding raised from other sources.

Question 129: Why did you only request $900,000 in FY 1991 when you need $5.2 million?

Answer: The Institution had originally requested an increase of $1.398 million for exhibit reinstallation in the FY 1991 OMB budget, but as a result of the OMB passback, the Institution had to reduce this request to $900,000. The FY 1991 request at the $900,000 level will enable the Institution to begin to address the two most critical of its present exhibit reinstallation needs: reinstallation of the permanent Freer exhibition galleries before its reopening in 1992, and the continued renovation of the Native American Hall at the National Museum of Natural History. Exhibit reinstallation is a continuous, long-term process, with funding required over a number of years for each phase of the work, from conceptual planning and exhibition design to exhibition production and installation. At the same time, the exhibit reinstallation requires a cyclical schedule with the reinstallation of different exhibitions begun in succeeding years according to a staggered timetable. Therefore, the Institution projects that the funding requirements for exhibit reinstallation will increase in the future to the $5.2 million level to provide funding for the latter phases of production costs for exhibits begun in FY 1991, as well as the initial phases of reinstallation for other exhibitions at the Museum of Natural History. The expanded funding base will also allow enable the Institution to begin to support the costs of major exhibition reinstallation of other museums in the future. The 5.2 million funding estimate would provide an additional $1.8 million for the Museum of Natural History (over the FY 1991 request level); and an additional 3 workyears and $1,670,000 for the Freer Gallery (over the FY 1991 request level). In addition, the funding level of $5.2 million will support exhibition reinstallation at the Museum of American History (7 workyears and $817,000), the International Gallery (2 workyears and $437,000), the Anacostia Museum (2 workyears and $140,000), the Air and Space Museum (1 workyear and $108,000), the Hirshhorn Museum ($100,000), the National Zoo ($100,000), and the establishment of a Washington, D.C. exhibition space for the Cooper-Hewitt Museum ($75,000).

Human Resources Management

Question 130: The National Academy of Public Administration (NAPA) urged that the Smithsonian shift the emphasis of its Human Resources Department from a "procedures and process" operation to an organization that provides leadership in managing in the Institution's human resources (pg. 3).

In addition, the Academy pointed out that the ratio of employees served to personnel staff was well above the ratio recommended by the President's Council on Management Improvement.

To accomplish many of the recommendations included in the report, the Smithsonian has requested an increase of $426,000 for FY 1991 and indicates that $668,000 is necessary annually.

Please identify the costs involved with each recommendation included in the reports, and the costs associated with each recommendation as well as the amount requested for FY 1991 for those recommendations.

Answer: The NAPA report made a number of recommendations which have significant cost implications. Among them are:

1. Branch chiefs should be full-time supervisors. Requires three Personnel Management Specialist positions ($165,000).
2. Training and experience voids. Current training needs identified at $21,000 for core professional training. Expected training levels estimated at $35,000.
3. Increase number of personnel assistants in personnel services branches. Requires three Personnel Assistants ($78,000).
4. Implement recommendations of earlier studies of OPersA. Two recommendations having significant cost implications are:
   - Inspector General Study. Develop and install personnel action tracking system. Minimum system under development budgeted at $60,000.
   - Management Analysis Office Study. Expand and improve Bar-Code personnel folder tracking system. Minimum enhancements estimated at $3,000.
5. Establish a post-audit program to monitor application of regulations and policies. Establish a personnel management evaluation program.
   - Post-audit program estimated to require two Personnel Management Specialist positions ($92,000).
   - Personnel management evaluation program estimated to require three Personnel Management Specialist positions ($165,000).

The recommendations listed above represent only a few of the recommendations identified in the National Academy of Public Administration report. After the Institution fills the current vacancy of the Director of Human Resources, the new director will be tasked with assimilating all the NAPA recommendations, determining with senior SI management which recommendations should be implemented and in which order and developing an action plan and budget.

Pending appointment of the new Director, expected by the end of this summer, the Institution is only seeking funding in FY 1991 to address two immediate critical needs: staffing to administer the delegated examining authority granted to the Smithsonian by the Office of Personnel Management in June of 1988 (5 workyears and $276,000); and additional staff to support the current level and quality of personnel services in response to the recent growth of total Smithsonian employment (4 workyears and $150,000).

Question 131: What is the current ratio of employees served to personnel staff at the Smithsonian, the ratio recommended in the NAPA report and some comparisons of other Federal agencies?

Answer: Between FY 1981 and 1989 the Smithsonian's total staffing increased by approximately 25 percent, while staffing for the Institution's Office of Personnel Administration (OPersA) increased by almost 36 percent. This increase improved the personnel-to-employee ratio from a calculated 1:105 to its current 1:92. In a 1987 comparison of 25 selected agencies based on OPM data, the ratios ranged from 1:30 to 1:112, with a median of 1:67. For example, comparable ratios for the Department of the Interior are 1:63, for NASA 1:67 and for Agriculture 1:68. A 1987 report by the President's Council on Management Improvement endorsed 1:72 as a government-wide benchmark. These numerical ratios are not a formula for success -- even the benchmark does not represent an ideal, but is a standard against which to judge the adequacy of OPersA's staffing level when considering a variety of factors. These include the Smithsonian's organizational structure, types and variety of occupations, degree of non-competitive service representation, extent of functions that require hands-on work, level of management advisory services and geographic dispersion. In the NAPA survey questionnaire, 27 percent of the respondents cited inadequate OPersA resources as a cause that contributed to its problems to a great extent. Interviews with Smithsonian managers and OPersA staff repeatedly described the personnel office as overworked and understaffed.

Audit Deficiencies

Question 132: The FY 1991 budget indicates that the Smithsonian maintains a strong program of audit and review of its financial program activity. An outside CPA firm performs an annual financial audit, the Inspector General performs financial and program audits on a regular cycle, and the GAO performs special audits from time to time (pg. 3).

These reviews and audits have identified deficiencies in internal controls, policies, and procedures.

The FY 1991 budget requests an additional $260,000 to eliminate the most critical audit deficiencies. The justification indicates that an additional $418,000 is needed to eliminate all known audit deficiencies.

What type of return on investment do you expect from the increase of $260,000? The $418,000?

Answer: The funding requested in the FY 1991 budget for audit deficiencies (9 workyears and $260,000) will enable the Institution to eliminate its most critical audit deficiencies. The majority of the funding will reinforce two specific areas in the Office of

Accounting and Financial Services: reconciliation of accounts (6 workyears and $159,000), and accounting policy and procedures (2 workyears and $70,000). The balance of the funding will enable the Institution's Office of the Inspector General to hire an additional auditor (1 workyear and $31,000).

The reconciliation of accounting records is a critical internal control function, since it exposes unauthorized transactions and transactions omitted either intentionally or unintentionally. Currently, all reconciliations are essentially done by hand. Staff time available to perform reconciliations is approximately the same as ten years ago, while the number of accounts and the volume of transactions have increased eight-fold. As indicated in both past and present audit reports, this situation has led to inaccuracies in accounting postings that could have been avoided if accounts were reconciled in a more timely and complete manner. The requested funding will allow the Office of Accounting and Financial Services to hire three accountants and three accounting technicians to operate an account reconciliation program that meets the requisite standards of timeliness, completeness, and audit worthiness.

Extensive analysis of the Institution's financial environment is required on a continual basis to develop accounting policy and procedures that comply with generally accepted accounting and internal control principles. Even after the decision is made to adopt a revised policy or procedure, work must continue to ensure its successful implementation throughout the Institution, and to test for compliance. With the conversion to the new Financial Accounting System, the Institution will require a substantial revision of existing accounting policies and procedures to reflect the changes instituted in the new system. The requested funding will allow the Office of Accounting and Financial Services to hire two new systems accountants to update present policies and procedures and dedicate more staff time to the implementation and compliance phases.

In April 1989, the Institution established the Office of the Inspector General (OIG) to meet the requirements of the Inspector General Act Amendments of 1988. This Office, formerly the Institution's Office of Audits and Investigations, must now carry out the expanded responsibilities mandated by the Inspector General system. The requested increase will allow the Office of Inspector General to hire an auditor position to support its investigative staff. Presently, auditors supplement the skills of the investigative staff in conducting such investigations when availability permits. With increases in OIG investigative cases, it has become increasingly more difficult to assign audit personnel to the investigative staff and still meet audit obligations. By increasing the expertise of its investigative function, which must address a wide variety of technical Smithsonian activities including procurement, financial management, and collections management, the Office of the Inspector General will help deter criminal activity and other forms of misconduct at the Institution.

The additional 9 workyears and $418,000 identified as an unfunded infrastructure requirements backlog would allow the Institution to address several less urgent audit deficiencies, including the reconfiguration of permanent and archival collections files at the National Portrait Gallery (2 workyears and $162,000), the purchase of additional security equipment for the Office of Protection Services ($50,000), collections inventory support for the Museum of American History (5 workyears and $136,000), and the reconciliation of fund balances and the preparation of periodic financial summaries and operations reports by the Smithsonian Astrophysical Observatory for the Smithsonian's Treasurer's Office (2 workyears and $70,000).

Space Deficiencies

Question 133: The FY 1991 budget indicates that the Institution has a variety of space deficiencies which need to be addressed in the near future. Currently, the Institution leases 99,000 square feet of Space at L'Enfant Plaza for administrative personnel, and owns 165,000 square feet of space on North Capital Street which is used as a service center.

However, the budget indicates a need for a Service Center of approximately 350,000 square feet to house all related activities in one place and to free space on the Mall for public programs. To address anticipated additional leased space in FY 1991, the Institution has requested an additional $248,000.

Are your total space needs 350,000 square feet or is that what is necessary to accommodate the Service Center? If not, what are your additional requirements?

Answer: The 350,000 square feet relates to the housing of activities now at the leased North Capitol Street facility which is approximately 165,000 square feet. As described in the Program of Requirements, the Service Center would provide for the following special purpose and light industrial functions: warehousing, shipping and receiving; craft and trade workshops; printing and binding workshops; vehicle maintenance; library and archival storage; training and a computer center. The 350,000 sq. ft. of space relates only to these and similar functions including some activities presently housed in Museum buildings (which the Institution needs to relocate in order to free space in those structures for public programs). In addition to service center requirements, the Institution needs space to consolidate administrative functions now housed in leased office space (preferably in a Smithsonian-owned building) and further develop the Institution's museum collection storage facility in Suitland, Maryland (perhaps amounting over the next 20 or more years to 2 million square feet).

Question 134: What proximity to the Mall is necessary?

Answer: Immediate proximity to the Mall is required for administrative functions, such as personnel, accounting and procurement activities. Such functions are now in leased space at L'Enfant Plaza and at Capital Gallery. A consolidation must be no further away than those locations and preferably closer. Special purpose and light industrial space must be convenient to and have easy access to the Mall. Average driving time during weekday business hours should not exceed 15 minutes. With regard to museum collections storage, we will continue to make use of and further develop our facility in Suitland which has proven to be quite convenient to downtown users.

Question 135: What type of lease/purchase agreement are you examining for the future?

Answer: For the service center, the Institution will entertain offers structuring its interest in a site in any of the following manners: lease with structure to effect a reversion of fee ownership to the Smithsonian at the end of the lease term, sale of site, sale of land and leasing of buildings and other alternatives. For administrative purposes, the preferred acquisition is space in a present Federal building made available to the Institution. For space requirements for collections storage, direct Federal construction on Smithsonian property is preferred although commercial development on a lease/purchase basis on our site will be explored.

Question 136: What size and type of space do you anticipate being necessary with the $248,000 increase you have requested in FY 1991?

Answer: Since a long-term solution to the consolidation of administrative functions in a Smithsonian owned building will not happen for several years, the FY 1991 budget requests funding to lease and prepare an additional 5,000 square feet of space in a commercial building to augment space now leased at the L'Enfant Plaza location in order to free space in the Arts and Industries Building for public programming. (Based on the Institution's cost-sharing of these space rental costs between Federal and Trust funds, the Federal share of these costs is $155,000 for space rental and $46,000 for space preparation.) The requested increase also included funding to hire a rent administrator (1 workyear and $47,000) to consolidate the administration of associated rent accounts within the Office of Facilities Services.

Conservation of Library and Archival Collections

Question 137: While the FY 1991 budget does not request additional funds for Conservation of Library and Archival Collections, it does identify an annual need of $6.2 million. It is my understanding that some discretionary fund monies are available to all the Smithsonian Directors for this purpose (pg. 5).

During last year's House hearing, the Smithsonian was asked to submit a Preservation and Conservation plan to the Committee. Unless I am mixing apples and oranges, the plan called for $713,000 for a brittle books program and a documentary research resources program.

How much have the Directors requested in the past for this purpose and how much has been provided?

Answer: Prior to the FY 1991 budget request, funds for preservation and conservation were subsumed under more general S&E requests, and it is not possible to identify or quantify them.

As a result of the House Subcommittee's request last year, the Institution identified an additional funding requirement of $713,000 for the first phase of a gradual approach to coping with growing documentary research resource deterioration problems: $162,000 for brittle books; $151,000 for a planning administrator and three technicians to assess the conservation needs of more than a dozen archives and documentation centers within the Smithsonian; and $400,000 for a series of "triage" conservation projects to clean, deacidify, repair, encapsulate, or otherwise treat some of the worst-case and more valuable items.

During Congressional action, a total of $113,000 was provided in FY 1990 for the conservation and preservation of brittle books, including the partial-year funding of the 4 positions required for the program. (The additional funding to annualize these part-year personnel costs ($21,000) is included in the FY 1991 budget request.) No funds were provided for the planning administrator and technician, or for the documentary research resource program.

Question 138: How does the plan you discussed with the House last year compare to the proposed $6.2 million plan?

Answer: The plan discussed with the House last year was for a phased program for the preservation of brittle books and documentary research resources. The plan represents the first phase of a moderate growth program that would allow the Smithsonian to analyze our needs thoroughly.

In FY 1988, the Smithsonian Institution Libraries (SIL) redirected a position to hire a preservation administrator who established policies and procedures for a preservation microfilming program. SIL also contracted with a commercial micropublisher to microfilm a small collection of publications. This project is serving as a pilot to test procedures for handling brittle material. With funding provided in FY 1990 ($113,000), the Smithsonian Institution Libraries has launched a modest brittle book preservation program. The SIL has one specific collection alone (200,000 trade catalogs) which alone could cost upwards of $8,000,000 to preserve.

The FY 1990 plan also requested support to hire a preservation planning administrator and three technicians to assess the needs, in non-book research resources, of more than a dozen archives and document collecting centers within the Smithsonian, and to prepare specific long-range preservation plans for each. To address critical needs in this area, the plan requested support to establish a competitive Research Resources Program, whereby proposals would undergo a peer review process linked to national professional expertise and concerns outside the Smithsonian. This plan would have allowed the Institution to present comprehensive plans of needs in future years and, at the same time, would have permitted the Institution to make a modest start in preserving non-book research resources.

The $6.2 million figure, identified as the estimated unfunded requirements backlog in the FY 1991 budget request, is not, properly speaking, a plan. It is an approximate accumulated aggregate of deficiencies in the central Smithsonian Libraries and the library at the Smithsonian Astrophysical Observatory and in preservation of documentary research resources in more than a dozen archives and bureau-based documentation centers. For example, among the components is an estimate provided by the central Smithsonian Archives that a backlog exists of some 8,000 cubic feet of records. This backlog requires rehousing, arrangement, and description to provide minimal basic archival holdings maintenance and intellectual control for research use at a cost of $4,560,000 (based on estimate of processing at $570 per cubic foot).

A second major component of the $6.2 million backlog is $625,000 for preservation of library and archival collections at the Museum of American History. Among the needs that this funding would address are: additional staff for archives conservation work, conservation supplies, compact shelving for the archives vault, and microfilm services. Also included in the backlog is $400,000 to fund the Research Resources Program (originally identified in last year's plan).

It is equally important to note that the $6.2 million figure does not include:

(1) an annual accumulation to the backlog of processing, from normal Institutional growth and diversity, which for the central Smithsonian Archives grows at the rate of 1,000 cubic feet of new accessions per year, and which would require $570,000 to process to a minimal level of acceptable archival control;

(2) the costs of specialized conservation work which includes cleaning, repair, deacidification, etc., which must proceed page-by-page at a cost of about $60 - $80 per hour and requires between 8-24 work-hours per page. These needs cannot be discovered and identified except through the aforementioned process of rehousing, arranging, and describing materials. The Institution cannot know the full scope of the need until the processing work is done. The National Archives estimates that perhaps one percent of its holdings requires this sort of work. If that estimate were applied to the central Smithsonian Institution Archives, it would translate into about 150 cubic feet or about 300,000 pages. At 10 hours per page and $80 per hour the cost would be $240 million. (The $400,000 request in FY 1990 for a Research Resources Program was intended to make a start on this); and

(3) longer-range intentions to plan and establish archival service facilities such as paper conservation, microfilming, photo conservation, and magnetic tape conservation laboratories for the high-volume, quick-turn-around work necessary to maintaining the momentum of a conservation program. Construction and furnishing of such a facility probably should be measured in the tens of millions of dollars, and S&E operation at about $5-7 million per year.

Question 139: What is the additional cost to defer this effort into the future?

Answer: The Smithsonian does not have an Institution-wide estimate, but the central Smithsonian Archives and the central Smithsonian Libraries can again serve as examples to indicate the probable dimensions of the problem.

Each year that the problem in the central Archives is not addressed adds another 1,000 cubic feet which would cost $570,000 to process to a base level of archival control. This figure must be compounded by somewhat similar figures for the Archives of American Art and the National Air and Space Archives, somewhat lesser figures for the National Anthropological Archives and the Archives Center of the National Museum of American History, and still lesser figures for some of the other bureau-based archives centers such as the Freer/Sackler Galleries Archives and the Eliot Elisofen Photographic Archives of the National Museum of African Art. There is at present no detailed, archives-by-archives calculation.

The National Commission on Preservation and Access now estimates that the cost of preserving one brittle book is $95.68. The average cost/volume for replacement of volumes with preservation microfilm or photocopy has increased over the last five years, and experts think this cost is likely to continue to rise. To defer this effort not only increases the cost, but also increases the risk of losing collections if they are not preserved. Failure to save collections would result in an eventual loss of $10,000,000, assuming a cost of only $100 per unreplaced volume.

To defer conservation and preservation only hastens deterioration, destruction, and depletion of research resources. Deferred investment simply intensifies a growing "national debt" of future replacement and renewal costs. Conservation is not a one-time need; it represents an essential sustained capital investment. Each year that the investment is not up to optimum levels accelerates cumulative deterioration, increases total cost and total loss, and makes it ever more difficult to recover these collections.

The non-monetary cost of deferring this preservation is a loss of the Institution's research resources for future generations. No research institution can eliminate the problem of deteriorating material, but by addressing these unfunded requirements, the Smithsonian can minimize it and better assure that its research resources endure for future generation.

Cultural Pluralism

Question 140: You have requested an additional $7.3 million in FY 1991 to undertake various initiatives that will broaden the cultural diversity of your public programs.

Could you provide for the Committee and for the record a breakdown of these funds by bureau and program?

Answer: The following table provides the breakdown of the $7.3 million by bureau and program:

BUREAU	INCREASE	FTE	$000s
A/S Museums, Immediate Office	African-American Programming	0	100
Nat. Museum of Natural History	Associate Director for Public Programs	2	100
Nat. Museum of American History	Columbus Quincentenary Program	1	95
Nat. Museum of the Amer. Indian	FY 1991 Program Growth	93	6,536
Nat. Museum of American Art	Columbus Quincentenary Exhibition	1	15
National Portrait Gallery	Columbus Quincentenary Exhibition	0	25
Hirshhorn Museum	Columbus Quincentenary Exhibition	0	30
Office of Public Affairs	Columbus Quincentenary Program	0	15
Smithsonian Institution Press	Columbus Quincentenary Program	0	15
Office of Folklife Program	Columbus Quincentenary Program	1	50
Off. of Elem. & Sec. Educ.	Quincentenary Symposium for Teachers	0	15
Off. of Quincentenary Programs	Quincentenary Planning	1	40
Affirmative Action Program	Special Employment Initiative (Phase III)	4	248
TOTAL, SMITHSONIAN		103	7,284

Nonappropriated Sources of Funding

Question 141: In the FY 1990 justification you anticipated that revenues from government grants and contracts would total nearly $24 million in FY 1989 (page 15). The FY 1991 justification indicates that you anticipate this will increase to $30 million in FY 1990 (page 14) and nearly $32 million in FY 1991 (page 307).

In addition, gross Trust fund revenues are anticipated to increase from a projected $225 million (page 15 states merely "exceeds $200 million") and an actual $240 million in FY 1989 to $248 million in FY 1990 and $253 million in FY 1991.

To what do you attribute these increases?

Answer: Actual government grant and contract revenue was $21 million in FY 1989, $3 million less than our original projections. This reduction in the level of anticipated awards resulted from delays and cutbacks in Federal funding for those government agencies and departments which traditionally have provided grants and contracts funding to the Smithsonian. The primary component of the increase from FY 1989 to FY 1990 is the funding of new programs in submillimeter astronomy and solar investigations at the Smithsonian Astrophysical Observatory.

Actual FY 1989 gross Trust fund revenues were up approximately $15 million over projected amounts. Unanticipated gifts and bequests were the largest component of the increase; most were transferred to endowment as per the donors' or Regents' instructions. In addition, interest and miscellaneous income were up although Institutional self-generated revenues were down.

Projected increases in gross Trust fund revenues in FY 1990 and FY 1991 are relatively modest, providing little more than the anticipated increases in inflation and uncontrollables. Further, our most recent projections with respect to self-generated revenues show significant decreases based upon FY 1989 experience and a general tightening of discretionary spending among our audiences.

Serious efforts are in fact underway to identify Trust fund budget cuts in the $2-3 million dollar range to insure our FY 1990 budget remains balanced. Similar cuts appear to be necessary for FY 1991 as well.

Climate Change

Question 142: In May of last year, several stratospheric molecules were obtained by a balloon-borne infrared spectrometer flown from Palestine, Texas (pg. 40).

Have Smithsonian scientists analyzed these molecules? If so, what have you learned?

Answer: Scientists from the Smithsonian Astrophysical Observatory have analyzed the stratospheric observations obtained with this balloon-borne infrared spectrometer. These were the first stratospheric observations of several of these atmospheric constituents, including the chlorine-containing reservoir species HOCl (hypochlorous acid). These measurements made by SAO scientists are more accurate than current theoretical predictions: From analyzing their measurements, SAO scientists found that the concentration of HOCl was about 40% lower than had been predicted. The chemistry involved is, however, so complicated that we can not yet conclude whether this result implies a greater or lesser threat to the ozone layer than had previously been thought. SAO also made the first day/night measurements of stratospheric HO_2 (hydroperoxyl radical). This species is highly reactive and plays a key role in the HO_x catalytic cycle of ozone destruction. SAO's results suggest a possible need for a revision of chemical theory in the 40 and 50 km altitude region, where it is already well known that the theoretically calculated amount of ozone falls short of the measured amount.

Environmental Studies Program

Question 143: The Smithsonian Institution and the Minerals Management Service are in the fourth of a five year study of an oil spill from a refinery in Panama which affected a Smithsonian coastal research facility (pg. 53). The spill is unique in that it affected an area of coral reefs, mangroves, and seagrass beds for which the Smithsonian had a significant amount of pre-spill data (pg. 35).

Can you briefly tell us what we have learned from the study so far?

Answer: In April 1986, at least 50,000 barrels of crude oil spilled from a ruptured storage tank into Bahia Las Minas on the Caribbean coast of Panama. The oil could not be contained and spread along about 50 miles of labyrinthine shoreline. A small amount of dispersant was applied to slicks about a week after the spill; clean-up efforts were very limited because mangrove swamps occur along most of the oiled shoreline. At about one-fifth the volume of the "Exxon Valdez" spill, it was the largest nearshore oil spill in the tropical Americas.

The Galeta Marine Laboratory of the Smithsonian Tropical Research Institute (STRI) is located about three miles west of the site of the spill. The coral reef at Galeta, where there have been over 20 years of biological studies, suffered extensive damage from the spill. Oil contaminated extensive areas of the reef and intertidal reef flat, causing massive die-offs of marine organisms. Other habitats damaged by the spill included seagrass beds and mangroves.

The reef at Galeta comprises about 50 acres of a 250-acre marine biological preserve studied by Smithsonian scientists since 1969. Support for these investigations, which have included the distribution, abundance, growth, reproduction, and behavior of marine plants and animals, has come mainly from the institution's Environmental Sciences Program. Collectively, this work provided a particularly extensive amount of baseline biological data for assessing effects of the spill.

This was the first major oil spill in such a well-studied tropical area. Furthermore, investigations began as oil was washing ashore. A short-term study of ecological effects of the spill, supported by the Minerals Management Service (MMS), was completed in March 1987. Assessments were made of effects of oiling on reef flat communities, reef-building corals, mangrove forests, communities attached to mangrove roots, and seagrass communities. Also, chemical analyses of oil in environmental and biological samples were conducted. STRI found that the spill had widespread lethal and sublethal effects on prominent organisms in all these environments, both intertidal and subtidal. The types of organisms affected covered the full spectrum of ecological categories: plants/animals, mobile/attached, predator/prey, etc. There were surprisingly extensive die-offs of submerged corals and of some types of animals in seagrass beds. Although the death of mangrove trees from oiling was not surprising, the extent of deforestation was unprecedented (about 185 acres along 17 miles of shore). The rich assemblages of organisms attached to mangrove roots were also devastated.

Chemical analyses confirmed visual rankings of the severity of oiling made during and soon after the spill (heavy, moderate, none), and documented massive concentrations of spilled oil in intertidal mangrove sediments at heavily oiled sites. They also demonstrated for the first time in natural populations a close association between concentrations of oil in the environment and in coral tissues. Such exposure to oil underwater appears to explain the observed die-off of corals.

The results of the short-term project demonstrated the need for longer-term investigations within and outside the oiled area. With further funding from MMS, STRI began a five-year study in March 1987. So far, STRI researchers have found that certain species of algae and invertebrates in environments exposed to the open sea regained pre-spill abundance and/or an abundance similar to unoiled controls less than two years after the spill. This recovery seems to result from a combination of short life-cycles and considerable reproduction of the organisms, and little chronic re-oiling along open coasts. Similar recovery has generally not occurred for organisms in more sheltered environments of Bahia Las Minas after nearly four years. In these areas there has been chronic re-oiling as the spilled oil emanates from mangrove sediments. As a result, oil slicks have been persistent for nearly four years at mangrove, seagrass, and coral reef sites.

There were instances of unexplainable declines in populations at control sites and resulting similarities with oiled sites a few years after the spill. One example of this occurred for reef-building corals. Such changes in controls complicate or preclude assessments of recovery from the spill. In this case, there is so little live coral both at oiled and control sites that prospects for recovery of coral reefs in the near future are not good.

Ecological data from all the studies are extremely variable among replicate samples from a particular site, among replicate sites, and through time. This is not unusual. However, such variability makes extensive replication necessary to detect differences related to oiling among sites and through time. Otherwise, statistical analyses may be uninterpretable and/or misleading.

Another approach to the problem of evaluating effects of pollution involves examining coral skeletons, which contain annual growth bands analogous to those in trees. Since corals may survive for many decades, they provide a long-term record of changing conditions for growth, associated in our study area with such factors as the 1986 spill, increasing sedimentation from deforestation and erosion, industrialization, and construction of the Panama Canal and the city of Colon. Our preliminary findings for the past decade show significantly reduced coral growth during 1986, the year of the spill, for three of four species. We plan to extend the scope of this type of analysis by drilling long cores of skeleton from large corals and thus obtaining 50-100 years of information on growth.

Large numbers of mangrove seedlings are growing in areas deforested by the spill. Some seedlings survived the spill, despite the die-off of surrounding adult trees. Others have dispersed into dead areas or were planted as part of a reforestation project sponsored by the oil company which caused the spill. Studies elsewhere suggest it may take at least 30 years for mature mangrove forests to repopulate the deforested acreage. Despite prompt recolonization, these mangroves grow slowly.

Large quantities of the spilled oil still occur in mangrove sediments; oil oozed from core samples collected about three years after the spill. This reservoir undoubtedly contributes substantially to the four years of chronic oil slicks that STRI scientists have observed since the spill. In protected inner reaches of embayments, continued oiling prevents the re-establishment of biological communities, for example, plants and animals attached to mangrove roots. At more open coastal areas where waves and currents flush coastal habitats, researchers observed at least partial ecological recovery on reef flats and mangrove roots within a few years of the spill. An important exception to this are reef- building corals, which have declined for reasons in addition to the oil spill. An important difference between northern and tropical coastal ecology is the vast extent of biologically generated physical structure in the tropics. These include coral reefs, mangroves, and seagrass beds, all of which provide myriad shelters, substrata for attached animals and plants, and food. Damage to or loss of any of these habitats has broad ecological ramifications as well as effects on physical processes, such as coastal erosion.

Question 144: How do you plan on using the information gathered in the study?

Answer: Information gathered from this study will be widely disseminated in manners common to scientific research conducted at the Smithsonian. The primary means of reporting technical findings is through peer-reviewed scientific journals. Some papers have been published; others have been submitted or are in preparation. A major article appeared in an issue of the journal *Science* in January 1989.

STRI expects the study to produce about 20 such technical articles. In addition, STRI will prepare three technical reports for the Minerals Management Service (MMS). The first of these has been submitted and is in review at MMS; it is nearly 500 pages long and covers findings through the first half of the study.

STRI also receives requests for information from various media. For example, reporting on the study has appeared in such newspapers as the *New York Times* and *The Washington Post*, and the magazine *New Scientist*.

As part of the study, data management staff organize and archive computer files for all data collected. The data are available both through the Smithsonian and MMS. Biological specimens will be stored at the National Museum of Natural History, where they will be available for future scientific study.

Question 145: Is this area similar to Federal waters off the coast of Florida?

Answer: Southern Florida and Panama share many species in common, including such important species as red mangrove, turtlegrass, and various reef-building corals. Since Florida is subtropical, water temperature there vary much more seasonally than in Panama. Many of the shared species are at or near their northern boundaries in Florida. Die-backs of tropical marine species during extremely cold winters are not uncommon in Florida.

The geologies of Panama and Florida are strikingly different. Whereas Panama is volcanic and tectonically complicated, Florida is part of an extensive carbonate-bank system. Coastal morphologies in the two areas tend to be rather different. For example, the massive turtlegrass beds off the western coast of Florida have no analog in STRI's study area, although the same species is abundant in both regions. Although reef-building coral species are shared between

Florida and Panama, the main framework species often differ between the two regions.

Since there exist a mix of biological and physical similarities and differences between the two regions, blanket generalities about ecological effects of a major oil spill could be misleading, at best. It is only safe to predict that a major spill on the coast of Florida would cause extensive die-offs of marine life. This has been seen repeatedly after major coastal oil spills in all regions of the world. Particulars on the distribution and extent of death would depend on environmental circumstances during the spill, and thus are more difficult to predict. Such particulars would also effect possible "trajectories" of ecological recovery.

There also exist other kinds of differences between Panama and Florida. For example, recreational uses of Florida coastal waters and beaches are far more extensive than in Panama. Differences in commercial and recreational fisheries also exist. As a result, socioeconomic consequences of a major oil spill on the coast of Florida could be much more serious than in Panama.

National Museum of the American Indian

Question 146: Public Law 101-185 established the National Museum of the American Indian. One provision in the Act requires that no funds can be obligated for actual construction of any facility until 60 days after the Board of Regents transmits to Congress a written analysis of the total estimated cost of the construction and a cost-sharing plan.

During the Board of Regents meeting in May of 1989, construction estimates proposed an $85 million museum on the Mall -- $24 million to renovate the Custom House in New York and $63 million for a museum support facility in Suitland, Maryland.

The FY 1991 budget indicates the estimate for the museum on the Mall has risen from $85 million to $106 million and the Suitland facility has decreased from $63 million to $44 million.

Why has there been a change in the estimates?

Answer: The May 1989 cost projections were very early "order of magnitude" estimates that were developed in the initial discussion stage of planning for the new facilities. The change in the estimates for the Suitland facility reflects later decisions regarding the aggregation of program elements to be located at that location. The total square footage estimate was therefore reduced from 350,000 square feet, which would have accommodated contiguous storage of existing anthropological collections of the National Museum of Natural History, to 200,000 square feet. This estimate of square footage will provide adequate storage, research, laboratory, and other support space for the Heye collection. The Suitland cost was also adjusted to include $12 million for equipping and furnishing the facility.

The May 1989 estimate for the Mall facility was increased to include the cost of equipping and furnishing the building ($10 million), and to include sufficient allowance for additional depth of excavation that may be required to ensure the required square footage if the building design has a roof elevation closer to that of Air and Space Museum rather than that of the East Building of the National Gallery of Art.

It should be noted, however, that the current cost estimates are still highly preliminary. The Institution will begin development of specific program requirements and relationships and conceptual planning of the two buildings in FY 1990. Only once this more precise information on planned space uses and possible configurations is available can there be reasonably accurate estimates of construction costs.

Question 147: The FY 1991 budget requests $6.7 million for construction of the Custom House. Funding for construction of the Mall site and the Suitland facility is not anticipated until FY 1992 and beyond.

What is the status of the construction plan and cost sharing plan required in the Act?

Answer: The Institution will use funding received in FY 1990 to begin detailed planning of the Custom House renovation and preliminary program planning for the two Washington facilities of the National Museum of the American Indian.

The Institution expects to complete planning of the Custom House space, including construction cost estimates, by early July 1990. The City and State of New York have both pledged $8 million toward construction of the Custom House space.

The Smithsonian will complete the detailed planning for the construction of the Suitland facility in FY 1991 and the Mall building in FY 1992. The authorizing legislation requires that one-third, or approximately $35.3 million, of the $106 million estimate for design, construction and equipping of the Mall museum be raised from private sources. The Institution is assembling a fund raising campaign in order to acquire these outside funds by FY 1994 when construction of the Mall museum is currently scheduled to begin.

Question 148: The May 1989 estimate included an estimate of $16 million for "one time costs" for the Mall and Suitland facilities. These costs include storage equipment, opening exhibits, conservation, research and library equipment, etc.

Is this cost still separate from the construction costs?

Answer: The costs for storage equipment, security installations, conservation, research and library equipment, and other furnishing and equipment are now included in the construction costs of the three facilities. Opening exhibition costs will be included in the National Museum of the American Indian's Salaries and Expenses request in the appropriate fiscal years.

Question 149: Has the estimate changed since May of 1989?

Answer: Yes, the current furnishing and equipping estimates for the Mall museum and the Suitland Collection Study and Research Center are $10 million and $12 million respectively. These estimates may be refined further as the Institution completes more detailed planning for these facilities.

Question 150: To meet the cost share requirements, the Smithsonian has requested an additional $670,000 to administer a fund-raising effort (pg. 130). The Smithsonian anticipates four major sources of funding for construction of these facilities: New York City; the State of New York; Federal appropriations; and private donations.

What do you anticipate your funding to be by source, and by year?

Answer: The Smithsonian anticipates funding for construction of facilities from the following sources, in the amounts indicated and in the fiscal years specified:

City of New York - $8 million for renovation of the Old United States Custom House; FY 1990-1991

State of New York - $8 million for renovation of the Old United States Custom House; FY 1990-1991

Private donations - $35.3 million no later than construction initiation in FY 1994.

Federal appropriations - As reflected in the following table:

	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Custom House Renovation [1]	$0.6	$6.7	$1.7			
Suitland Collection Storage	$0.3	$1.0	$30.7	$12.0		
Mall Museum Building[2]	$0.7	$0.4	$7.4		$52.2	$10.0
Total	$1.6	$8.1	$39.8	$12.0	$52.2	$10.0

*Estimates are subject to revision as a result of timing associated with Smithsonian and Office of Management and Budget planning/budget cycles, and incorporation of information affecting projections.

---

[1] The Institution will receive aforementioned funding of approximately $16 million from the City and State of New York.

[2] FY 1990 & FY 1991 include funds for general planning of all facilities. As noted above, fund raising will provide $35.3 million for construction.

SUBCOMMITTEE RECESS

Senator **Reid**. I thank you very much. The subcommittee will stand in recess until 10 a.m., Tuesday, March 27, when we will hear testimony on fiscal year 1991 budget for Indian Health Service and Fish and Wildlife Service.

[Whereupon, at 11:46 a.m., Tuesday, March 20, the subcommittee was recessed, to reconvene at 10 a.m., Tuesday, March 27.]

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1991

TUESDAY, MARCH 27, 1990

U.S. Senate,
Subcommittee of the Committee on Appropriations,
Washington, DC.

The subcommittee met at 9 a.m., in room S-128, the Capitol, Hon. Harry M. Reid presiding.

Present: Senator Reid.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Indian Health Service

STATEMENT OF DR. EVERETT R. RHOADES, DIRECTOR

ACCOMPANIED BY:

- DENNIS P. WILLIAMS, DEPUTY ASSISTANT SECRETARY, BUDGET DEPARTMENT OF HEALTH AND HUMAN SERVICES
- MILBURN H. ROACH, EXECUTIVE ASSISTANT TO THE DIRECTOR OF THE INDIAN HEALTH SERVICE
- BILL F. PEARSON, ASSOCIATE DIRECTOR, OFFICE OF ENVIRONMENTAL HEALTH AND ENGINEERING
- DR. JOHN PORVAZNIK, ASSOCIATE DIRECTOR, OFFICE OF HEALTH PROGRAMS

OPENING REMARKS

Senator Reid. The subcommittee will come to order. This is the time scheduled for the Subcommittee on Interior and Related Agencies to receive testimony and review the fiscal year 1991 budget request for the Indian Health Service. Testifying this morning is Dr. Everett Rhoades, the Director of the Indian Health Service.

The fiscal year 1991 budget request for funds subject to appropriation for the Indian Health Service is $1,292,080,000, an increase of $42,110,000 over the fiscal year 1990 level.

In addition to funds appropriated by this subcommittee, the fiscal year 1990 level included $8,750,000 in antidrug funding recommended by Chairman Byrd in his amendment to the transportation appropriation bill. Pursuant to the deficit reduction legislation, any sequestration of Indian patient care funds is capped at 2 percent.

For fiscal year 1990, the Indian Health Service funds were reduced by $15.7 million due to the sequester order. As with prior years, the administration has requested a bare bones facilities program for the Indian Health Service.

The fiscal year 1991 facilities request is 82 percent below last year's level. Of the requested operating increase for the Indian Health Service, approximately $72.6 million, or 62 percent, is associated with built-in inflationary increases, such as pay costs and medical supplies.

The remainder is identified as programmatic increases. Nearly one-half of that is associated with the ongoing support costs due tribal contractors who manage their own health programs.

Dr. Rhoades, your complete written statement will be included in the record, as is the custom of the subcommittee. After introducing your associates, I encourage you to summarize your remarks briefly, so that we may proceed directly to questions.

I would further indicate that this is—that this budget has received additional attention this year for a number of reasons, and we want to spend adequate time on questions. The problem is, as you know, we juggled this time around, and after changing the time we learned that the leadership has scheduled a vote for sometime early this morning.

So, we are going to do the best that we can. We would like you to take special care this year in answering the written questions that we submit to you, because there will be some written questions that we will not have time to get to today. You may proceed, Dr. Rhoades. If you would introduce your associates, please.

INTRODUCTION OF ASSOCIATES

Dr. **Rhoades**. I am Dr. Everett Rhoades, the Director of the Indian Health Service, and accompanying me today on my far right is Mr. Dennis Williams, Deputy Assistant Secretary for Management at the Department of Health and Human Services; and on my immediate right is Mr. Howard Roach, Executive Assistant to the Director, Indian Health Service.

To my immediate left is Dr. John Porvaznik, the Associate Director of the Office of Health Programs; and on my far left is Mr. Bill Pearson, who is the Associate Director for Environmental Health and Engineering.

PREPARED STATEMENT

We are pleased to be here today, Mr. Chairman, to discuss the 1991 budget, and I believe that since you summarized the figures for the budget very well, I would submit my statement for the record and I am now prepared to go ahead with responding to questions.

[The statement follows:]

STATEMENT OF DR. EVERETT R. RHOADES

I am Dr. Everett Rhoades, Director of the Indian Health Service. I am accompanied by Mr. Robert Singyke, Deputy Director, Mr. Milburn Roach, Executive Assistant, Dr. John Porvaznik, Associate Director for Health Programs, Mr. Bill Pearson, Associate Director for Environmental Health and Engineering. We are pleased to be here today to discuss with you the Fiscal Year 1991 budget request for Indian Health programs.

The Indian Health Service (IHS) is the Federal agency charged with administering the principal health program for American Indians and Alaska Natives. The goal of the IHS is to raise the health status of American Indian and Alaska Native people to the highest possible level. Its mission is threefold: 1) to provide or assure the availability of high quality, comprehensive, and accessible health services; 2) to provide increasing opportunities for Indians to manage and operate their own health programs; and 3) to serve as a health advocate for Indian people. In FY 1991, the IHS will continue its mission by providing comprehensive health services to over one million Indian and Alaska Native people.

The IHS comprehensive delivery system is composed of two major systems: 1) a Federal health care delivery system, administered by Federal personnel, and 2) a tribal health care delivery system, administered by tribes and tribal organizations. Both systems include health care services provided directly and health services purchased from over 2,000 private providers. Both of these systems are reflected in the budget request under the respective headings of Federal Indian Health Administration and Tribal Health Administration. In addition, there are 34 urban Indian health projects providing a wide variety of health and referral services.

The program reflected under the budget heading of Federal Indian Health Administration is made up of 78 service units, 43 hospitals, 67 health centers, five school health centers and 55 health stations as of October 1989. The range of services provided include emergency medical, curative, rehabilitative, and preventive. In FY 1988, there were 3,878,331 outpatient visits and 92,393 hospital admissions. A priority of the federally administered program is preventing disease through promoting healthy behavior.

The program reflected under the budget heading of Tribal Administration is made up of 56 service units, 7 hospitals, 86 health centers, 3 school health centers, 63 health stations 173 Alaska Village clinics as of October 1989. Through self-determination contracts, the tribal health programs continue the comprehensive preventive and curative service delivery systems initiated by the IHS. In FY 1988, there were 1,111,349 outpatient visits and 12,475 hospital admissions. Included in this activity are special programs in dental health, mental health, alcoholism and substance abuse, and contract health care.

Since the transfer of Indian Health programs from the Department of the Interior to the Public Health Service in 1955, the health status of American Indians and Alaska Natives has improved dramatically. For example, the maternal death rate for American Indians and Alaska Natives dropped from 82.6 maternal deaths per 100,000 live births in 1957-1959 to 8.8 in 1985-1987, a decrease of 89 percent. In 1987, there were 2 Indian maternal deaths. Many other examples of gains in health status exist and are reported annually in the IHS "Trends in Indian Health."

Access to IHS services continues to improve. Outpatient visits, including both contracted services and those provided in tribal clinics, have increased from 0.5 million in FY 1955 to 5.0 million in FY 1988, an increase of 1,000 percent. In the past 8 years, a total of one million visits have been added. The IHS and tribal direct and contract hospital admissions have increased from 50,000 in FY 1955 to 105,000 in FY 1988, an increase of 110 percent.

For FY 1991, the budget request for the IHS includes $874,637,000 for the programs under the budget heading Federal Indian Health Administration, an increase of 7.8 percent over the FY 1990 level, and includes $404,287,000 for programs under Tribal Health Administration, an increase of approximately 10 percent from the FY

1990 enacted level. The request for budget authority for IHS services is $1,278,924,000, an increase of $100,587,000 over the FY 1990 revised appropriation of $1,178,337,000. The FY 1991 request also includes $13,156,000 for Indian health facilities repair and construction.

Additionally, $134,100,000 will be available to the IHS through reimbursements for a total program level of $1,426,180,000. An estimated $84,000,000 collected from Medicare and Medicaid will be used for correcting Joint Commission on Accreditation of Health Care Organizations and Health Care Financing Administration survey deficiencies and for maintaining accreditation. The IHS proposes to use the estimated $40,000,000 collected from private insurers to augment those services that provide health care to Indians as required by Section 207 of the Indian Health Care Amendments of 1988.

During FY 1991, the IHS will continue the services funded in FY 1990, emphasizing a commitment to management excellence and quality of care, with primary attention to the immediate health care needs of the Indian people. Central to the commitment to management excellence is the quality management program begun in FY 1989. The program will strengthen the overall IHS organization and provide the best and most complete health care delivery services within available resources. Included in this commitment is the continuing emphasis on tribal management of programs and Indian self-determination.

The IHS is committed to supporting and promoting activities to maintain a sound, comprehensive care program while at the same time strengthening efforts to promote wellness through healthy behavior and by reduction of risk factors. Throughout all programs, the IHS continues to focus on quality assurance of health care delivery.

The IHS health services program has grown by approximately 30 percent since 1983, while the administrative budget has grown by 2.6 percent. In addition, the beneficiary population has grown at a rate of approximately 3 percent a year with an associated increase in demand for services. This growth in program size and complexity and the ever increasing need for accountability of all aspects of the program have placed a sharply increased burden on the IHS administrative infrastructure. This is particularly true in the administration and implementation of internal control measures and in insuring adequate control of resources necessary to diminish the risk and vulnerability of fraud and abuse.

The FY 1991 budget request includes $2 million for necessary staff to correct critical deficiencies in administrative functions and responsibilities. These deficiencies have been identified as a part of our quality management program. This strategy focuses on strengthening IHS administration and management by making immediate corrections where necessary, encouraging innovation in management systems and instilling in all IHS employees a commitment to professionalism, integrity, and accountability. This strategy has the highest priority among our current objectives.

An important emphasis of the IHS management improvement program is to continue the implementation of automated data systems. Automation will improve both the quality and timeliness of information necessary to more effectively manage the program and control resources. The requested increase of $5.8 million in FY 1991 will enable the IHS to initiate improvements and expansion of the information resources management program.

The priority for management improvement does not lessen other IHS priorities. The IHS will continue to emphasize innovative efforts in the prevention of illness, especially involving alcohol and substance abuse, injuries and mental health. Reduction of modern causes of disease and disability require a different set of precepts and disciplines than in the past when provision of sanitation and immunizations proved so successful. Techniques now required to prevent life-style associated pathology require educating health care providers to the new discipline of health promotion and disease prevention; changing the life-styles of the health care providers themselves to be leaders in health promotion; and efforts to secure the involvement of the respective communities in the development and "ownership" of their own health promotion activities.

The continued emphasis upon health promotion as here described has produced gratifying results, none more than in the field of alcohol abuse. For example, the age-adjusted death rate from alcoholism for American Indians and Alaska Natives residing in the Reservation States has decreased 61 percent since its peak in 1973. In 1989, more than 250 individual Tribal Action Plans addressing alcoholism and substance abuse have been implemented and 88 percent of Federally-recognized tribes passed resolutions authorizing formation of Tribal Coordinating Committees to address alcoholism and drug abuse problems in their communities. As a result of the efforts by the IHS, there is a growing momentum of alcoholism prevention in various Indian communities. For example, at least two tribes, the Akhioka Village in Alaska and the Cheyenne River Sioux tribe in South Dakota, have enacted resolutions declaring that they intend to be free of the adverse consequences of alcoholism by the year 2000.

In FY 1990 the IHS mental health program received a funding increase of $8,422,000 to address mental health problems in American Indians and Alaska Natives. Problems of alcohol misuse, depression and anxiety frequently underlie and complicate physical disorders, including traumatic incidents, and require considerable attention from all care-givers. The funding increase will provide for about 130 additional positions or equivalent services to be purchased. In either case, the funds will be directed at unmet needs in child and family mental health services.

Recruitment and retention of health care workers continues to be a high priority, occupying a substantial portion of effort by many. The nurse shortage throughout the United States has affected the IHS in many of the same ways that it has affected the private sector. The current IHS vacancy rate for nurses is approximately 15 percent. Regarding physician vacancies, 155 are projected for the summer of 1990. The loan repayment program has become an essential part of the IHS recruitment and retention program and will continue in FY 1991 along with other strategies including intern programs, continuing education, and career ladder and development programs. The IHS request addresses the lack of sufficient numbers of Native American health professionals.

The IHS continues to emphasize Indian self-determination. A major activity in FY 1989 was the development of regulations for the implementation of Public Law 100-472, the Indian Self-Determination Act Amendments of 1988. This highly intense activity continues to consume much of IHS' staff and attention. The IHS collaborated closely with the Bureau of Indian Affairs and about 500 Federally recognized tribes. A joint IHS/BIA staff draft of the notice of proposed rulemaking is being reviewed by the tribes for further comment. Subject to comments received and resolution of any outstanding issues, we plan to issue the notice for proposed rule making later this fiscal year.

Again, separate requests for Tribal and Federal Indian Health Administration are proposed in the FY 1991 President's Budget to promote self-determination and reflect continued support for the locating program administration at the local level. The budget includes $101 million, or full funding of estimated current contract support costs; expansion of the Indian Health Manpower scholarship program to its full statutory authorization of $12.6 million; and $4.1 million for management training for existing and potential self-determination contractors. As a result, we believe the FY 1991 President's Budget provides a greater choice to tribes and tribal organizations in determining whether to assume responsibility for health services themselves, or to continue receiving direct Federal health care services, more fully meeting the intent of P.L. 93.638.

In FY 1991, the IHS will continue to allocate program increases among Areas based on user population, actual workload, health status indicators, and standardized cost factors while providing for participation of tribes in planning, managing, staffing and evaluating IHS programs. The resource allocation models will continue to be reviewed and further refined. Particular emphasis will be given to the areas of greatest health concern, such as the three leading killers of Indians: heart disease, injuries, and cancer; the causes of increased years of premature life lost; mortality of infants and children; and certain important conditions such as diabetes, mental health, and alcohol and substance abuse.

Mr. Chairman and members of the Committee, I will be pleased to answer any questions you may have on the specifics of the FY 1991 budget request.

BIOGRAPHY OF EVERETT R. RHOADES

EDUCATION:

High School:	Elgin High School, Elgin, Oklahoma 1945-1949
College:	Lafayette College, Easton, Penn., September 1949 - June 1952 No Degree
Medical School	University of Oklahoma School of Medicine Oklahoma City, Oklahoma, September 1952 - June 1956 M.D. Degree
Advance Training	Internship: Gorgas Hospital, Canal Zone, July 1, 1956 - July 1, 1957 Residency: Internal Medicine, University of Oklahoma Medical Center, July 1957 - July 1960 Chief Resident Medicine: University of Oklahoma, July 1960 - July 1961 Sub-Specialty Interest During Residency Training: Infectious Disease (18 months total)
MEDICAL LICENSURE:	Oklahoma 1956
SPECIALTY QUALIFICATION:	Diplomate American Board of Internal Medicine, 1963

TEACHING POSITIONS AND PROFESSIONAL EXPERIENCE:

1. Clinical Assistant in Medicine, University of Oklahoma Medical Center 1960-1961
2. Chief, Infectious Disease Section, Wilford Hall USAF Hospital 1961-1966
3. Consultant in Infectious Disease, University of Oklahoma Medical Center 1963-1966
4. Associate Professor of Medicine, University of Oklahoma Medical Center 1966-1972
5. Assistant Professor of Microbiology, University of Oklahoma Medical Center 1966-1972
6. Professor of Medicine and Adjunct Professor of Microbiology, University of Oklahoma Health Science Center 1972-1982
7. Chief, Infectious Disease Section, University of Oklahoma Medical Center 1968-1982
8. Chief, Infectious Disease Service University Hospital, 1975-1982
9. Director, Indian Health Service, 1982
10. Assistant Surgeon General, USPHS 1982

AWARDS AND HONORS:

Zeta Psi Scholarship to an Indian Student, Lafayette College 1949-1952
John Hay Whitney Opportunity Fellowship 1952-1956
Polio Foundation Fellowship 1954
Student Research Achievement Award 1956
Outstanding Achievement Award, Veterans Administration Hospital, Oklahoma City, Oklahoma 1960, 1961
Unit Citation Award, Wilford Hall USAF Hospital 1965
Air Force Certificate of Merit 1967
Markle Scholar in Academic Medicine 1967-1972
Kiowa Tribal Black Legging Society (Veterans Honor Society)
Outstanding Achievement, Association American Indian Physicians
Oklahoma Lung Association Wonder Worker Award 1974
Oklahoma Lung Association Breath of Life Award 1977 (Highest Award of OLA)
U.S. Public Health Service Recognition Award 1977
National Honor Lecturer of Mid-America State Universities Association of 1979
Association of American Indian Physicians Award of Excellence 1980 (Aug)
Public Health Service Commendation Medal 1982
Public Health Service Citation 1983
Public Health Service Meritorious Service Medal 1985
Thomas N. Lynn Lecturer, University of Oklahoma 1984
Richard A. Kern Award, Association of Military Surgeons, US 1988
Surgeon General's Exemplary Service Award 1988
DHHS Chief of Staff Special Commendation 1989

BIOGRAPHICAL LISTINGS:

Directory of Medical Specialists
Dictionary of International Biography 1973
Who's Who in South and Southwest, 1973
American Men and Women of Science
Indians of Today
Contemporary American Indian Leaders
Reference Encyclopedia of the American Indian
Voices. A History of the Kiowa Tribe

COUNCILS, BOARDS, And PROFESSIONAL COMMITTEES:

Research and Education Committee, V.A. Hospital 1972-1973 Vice-Chairman 1975-1977, Chairman 1977 -
Infection Control Committee, V.A. Hospital, Chairman, 1972-1982
Infection Control Committee, University Hospital, Chairman, 1972-1982 -
Faculty Advisory Committee, Department of Microbiology, 1971
Nominating Committee, Scientific Assembly on Microbiology (Chairman) American Thoracic Society, 1975
Advisory Committee, Department of Medicine, 1975
Biohazards Committee, University of Oklahoma Health Sciences Center 1976 -
Admissions Committee, University of Oklahoma College of Medicine 1977-1981
National Advisory Allergy and Infectious Disease Council (NIH) 1971-1975
National Advisory Council on Minority Business Enterprise 1970-1972
Board of Directors, Association on American Indian Affairs 1970-1982
Board of Directors, Progress Association for Economic Development, Oklahoma City 1973-1975
Board of Directors, Oklahoma Lung Association 1975-1982
Board of Directors, Central Oklahoma Indian Health Project 1972-1982 (Chairman, 1976)
National Committee on Vital and Health Statistics (USPHS) 1978-1982
Editorial Board - *Public Health Reports* 1982 -
Secretary's Task Force on Black and Minority Health (Dept. HHS) 1984-1985
Secretary's Interagency Task Force on Indian Alcoholism (Chairman) 1986
Flag Officer Nomination Board, USPHS (Chairman) 1988 -
Nominating Committee for Chief Pharmacy Officer, USPHS (Chairman) 1988
USPHS Executive Task Force on AIDS 1988
Dept. of HHS Task Force on Reduction of Demand for Illicit Drugs 1988

SOCIETIES AND ORGANIZATIONS:

Phi Beta Kappa
Alpha Omega Alpha
Sigma Xi
American Federation for Clinical Research 1970-1982
American Society for Microbiology 1970-1982
American Thoracic Society 1963-1982
American College of Physicians Fellow, 1963-present
Southern Society for Clinical Investigation 1968-1982
Infectious Diseases Society of America, Fellow 1974-present
Oklahoma Thoracic Society - 1966-1982 (President 1973-1974)
Oklahoma Infectious Diseases Society, 1978-1982
Air Force Society of Internists & Allied Specialists 1961-1966
Commissioned Officers Association (USPHS) 1982-present
Association Military Surgeons U.S. 1982-present
National Congress of American Indians, 1967-1982
Association on American Indian Affairs, (Board of Directors, 1967-1982; vice president, 1978-1982)
Association of American Indian Physicians (President 1972 & 1976)
Kiowa Tribal Black Legging Society, (Veterans Honor Society), 1967-present; (consultant to Commander, 1970-1982)
Kiowa Gourd Clan, 1970-present

RETENTION PROBLEMS

Senator REID. Thank you very much, doctor. The Indian Health Service has indicated that new facilities are being staffed at a level which represents approximately 85 percent of design capacity.

My understanding is that existing facilities are staffed at approximately 70 percent. So, my first question is, doesn't understaffing of facilities contribute to retention problems, with staff departing because they are simply overworked?

Dr. RHOADES. That's true.

Senator REID. Isn't this problem exacerbated at older facilities where the working conditions are perhaps less than ideal?

Dr. RHOADES. There is every reason to believe that is correct.

Senator REID. Give us a reason then, why newer facilities are staffed at a fuller rate than existing facilities?

Dr. RHOADES. It is a dilemma for the Indian Health Service, insofar as Congress has expressed its intention to replace old outdated facilities, and construct new facilities where none were in existence.

And the design of those facilities, and the construction of those facilities call for a wider range of services than are available in some of our older facilities. So, we are placed in the difficult position of designing and constructing a facility, and it does not seem proper not to request full staffing for those newly constructed facilities, recognizing that in fact many of the old facilities are staffed at a considerably lower rate.

Senator REID. What resources would be required to staff all facilities at the 85 percent level?

Dr. RHOADES. Based upon our—upon the resource requirement methodology that the Indian Health Service uses, the figure would be very close to $250 million to bring all staffing to a level of approximately 80 percent.

I would suggest to you that that figure is very close to the correct figure.

VACANCY RATES

Senator **Reid**. What is the current vacancy rate for physicians?

Dr. **Rhoades**. Let me ask Dr. Porvaznik to answer that.

Dr. **Porvaznik**. The projected rate for the coming summer is about 200 physician vacancies out of a total of about 850 physicians.

Senator **Reid**. And how about for nurses?

Dr. **Porvaznik**. For nurses, we are running a vacancy rate of about 14 to 15 percent, and if you calculate that out, that equates to about 315 nurses positions that are vacant.

Senator **Reid**. What is the reason that you are short physicians? Is it just money?

Dr. **Porvaznik**. Oh, I think money is a factor, but I think there are a number of other reasons.

Senator **Reid**. What are some of those reasons?

Dr. **Porvaznik**. Some of ours are geographic locations where the physicians and nurses are required to serve, and lack of social amenities in some of those areas. Those would be some of the major reasons.

LOAN REPAYMENT PROGRAM

Senator **Reid**. Is there any hope of being able to fill a large percentage of these position vacancies?

Dr. **Rhoades**. Yes.

Dr. **Porvaznik**. Yes; well, we are very enthusiastic about the loan repayment program that has recently been instituted, and second, there have been some salary incentives for both physicians and nurses that have tended to bring the salary rates for physicians and nurses closer to comparability with the general U.S. sector. Not to comparability, but closer to it.

Those two factors, as far as compensation goes, are important facets. There is a certain sense of satisfaction that the physicians and nurses get from serving an underserved population, and that is a built-in inherent factor, that physicians and nurses have a job where they are getting satisfaction.

Continuing medical education is another benefit that they are given, and when you put all those factors together, I would say that in a way summarizes some of our major activities for recruiting and retaining physicians and nurses.

Senator **Reid**. Please explain to me the loan program that you mentioned.

Dr. **Porvaznik**. We are able to offer physicians, nurses, and other health professionals up to an amount of $25,000 a year to offset, or pay back, the loans which they have incurred for their health educations for service in the Indian Health Service.

Senator **Reid**. Tell me practically how that would work, please? Say that I am a medical student.

Dr. **Porvaznik**. We are right now, with the amount of funds that we have, we are limiting the funds to those who are ready to come to work with the service, so we are concentrating primarily on residents, and people who are finishing their training rather than medical students.

Medical students still have maybe 3 or 4 years to go, and so we are concentrating on residents. A resident, when he is finishing his residency, will apply to the Indian Health Service for a position as a physician. Let's take a physician as an example.

At the same time, he will submit an application for a loan repayment to offset the loans that he or she has incurred. Those loans today are substantial; up to around $50,000 or $60,000 for residents who are finishing their training.

They are to sign a 2-year contract, and their loans will be repaid at up to $25,000 per year of service.

Senator **Reid**. Plus, they are paid while working?

Dr. **Porvaznik**. Oh, yes; they receive their regular salary as a physician, or a nurse, through the Indian Health Service, and then in addition to that the loans can be offset to the extent to which I mentioned.

Senator **Reid**. I am interested in that. I think that in some of our inner cities that we have programs like that; like dentists, for example. We have a tremendous shortage of dentists in the inner cities, and we kind of let the dental work go, even though dental work is needed, and can cause tremendous emotional problems, and physical problems.

Anyway, I was just interested in this; and I would ask that you send to me how many students have taken advantage or how many doctors have taken advantage of this, and where they are located. Can you do that?

Dr. **Rhoades**. Yes.

Senator **Reid**. Last year, Congress provided $3 million for a loan-repayment program for the Indian Health Service to offer as an incentive in the recruitment of needed medical personnel.

Now, I have skipped ahead and you have answered many of these questions. I have—we will submit to you in writing a number of questions that are on the same basic subject that we covered generally, but if you would give me those—that area that I personally requested in addition to that, I would appreciate it.

[The information follows:]

INDIAN HEALTH SERVICE [IHS] LOAN REPAYMENT PROGRAM

The following numbers of physicians and nurses have entered the Indian Health Service [IHS] Loan Repayment Program since its inception in fiscal year 1988:

	Physicians	Nurses
Fiscal year:		
1988	56	43
1989	46	57

Thus far in fiscal year 1990, commitments have been made to 33 physicians and 28 nurses.

These physicians and nurses have been assigned to the following facilities:

Aberdeen area.—Belcourt, ND; Fort Berthold, ND; Fort Yates, ND; New Town, ND; Pine Ridge, SD; Rosebud, SD; Sisseton, SD; and Wagner, SD.

Alaska area.—Anchorage, AK; Barrow, AK; Bethel, AK; Kodiak, AK; Kotzebue, AK; Nome, AK; and Sitka, AK.

Albuquerque area.—Albuquerque, NM; Grants, NM; Mescalero, NM; Santa Fe, NM; and Zuni, NM.

Bemidji area.—Kincheloe, MI; Muskegon, MI; Cass Lake, MN; Cloquet, MN; Redlake, NM; and Bad River, WI.

Billings area.—Browning, MT; Crow Agency, MT; Fort Belknap, MT; Lame Deer, MT; Poplar, MT; and Fort Washakie, WY.

California area.—Toiyabe, CA.

Nashville area.—Cherokee, NC.

Navajo area.—Chinle, AZ; Fort Defiance, AZ; Kayenta, AZ; Tuba City, AZ; Winslow, AZ; Crownpoint, NM; Gallup, NM; and Shiprock, NM.

Oklahoma City area.—Clinton, OK; and Lawton, OK.

Phoenix area.—Keams Canyon, AZ; Peach Springs, AZ; Phoeniz, AZ; San Carlos, AZ; White River, AZ; and Roosevelt, UT.

Portland area.—Lapwai, ID; Warm Springs, OR; Colville, WA; and Tahola, WA.

Tucson area.—Sells, AZ.

LICENSED PHYSICIANS

Senator REID. Are there circumstances where a physician who is not licensed could practice?

Dr. PORVAZNIK. Very, very rarely. The vast majority of our physicians are licensed, and our estimates are that over 95 percent of our physicians are licensed, and it is a rare situation where someone is not licensed.

Senator REID. I am told that in your budget justifications this year, it states that only 70 percent of your physicians are now licensed.

Dr. PORVAZNIK. We were reading the budget justification document a while ago, and we recognized what we had done, and we had reversed two figures; and that our licensees are over 95 percent. It is our board certified, or those who have completed training that are at the 70-percent figure. The two figures are reversed.

Senator REID. That lets you know that we do look over your justification documents.

Dr. PORVAZNIK. Yes; you have. But let me put on the record though that those two figures should be reversed then.

PRIVATE INSURANCE COLLECTIONS

Senator REID. Beginning in fiscal year 1990, the Indian Health Service will collect reimbursements from private insurers for services provided by the Indian Health Service to eligible Indian patients at IHS facilities.

For fiscal year 1991, IHS projects that $40 million will be collected and reinvested in the Indian Health Care System. What is your projection for collections in 1990?

Dr. RHOADES. We project a collection of $8 million in 1990, Mr. Chairman.

Senator REID. Isn't this considerably lower than what you projected a year ago for fiscal year 1990?

Dr. RHOADES. I believe that is correct.

Senator REID. It is significantly lower than last year. Could you give us an idea of why we have a dramatically lower projection?

Dr. RHOADES. We had anticipated greater progress being made in a number of elements concerned with providing us the ability to bill and collect from private insurance. The breakthrough really came with the amendments to the Indian Health Care Act, which placed us in the position of being able to collect.

And the development of a billing process, and the development of automation, and the training of clerks and so forth did not get underway as quickly as we had anticipated.

Senator REID. It is my understanding that up to this point you have collected less than $1 million.

Dr. RHOADES. That is correct.

Senator REID. So, do you think that you can collect the $8 million in the remainder of the year?

Dr. RHOADES. It may turn out as the year goes by that our earlier projections were perhaps a little bit optimistic, based upon the straight earning projections. However, we are rapidly increasing the number of our service units who, in fact, are billing, and we believe that the curve will go up more steadily as we develop the ability to bill and collect.

Senator REID. This money that has been received as a result of collections, does the money remain at the locations where it is collected, or is it pooled centrally and then reallocated?

Dr. RHOADES. It is pooled and reallocated, following the guidelines that have been developed from the earlier model; that is, the collections from the Medicare and Medicaid systems.

Senator REID. Then what incentive would the tribe have to vigorously pursue collections if it just goes to some pool to be reallocated?

Dr. RHOADES. There is a problem there; that is correct, and we will be able to correct that in time. Experience has shown that 80 to 85 percent of the funds that are collected in fact go back to the collecting service unit. I realize that is indirect.

Senator REID. Why could we not just make it direct instead of indirectly? What would it take to make it go directly?

Dr. RHOADES. I think it would be possible to work out a system in which we could make it direct. However, there are certain considerations of a national nature, such as the question that you just went over, like loan repayment for physicians and so forth, which is more efficiently done in a more centralized manner.

Even though the money is pooled in a central location, in fact, it is not spent on a central location activity. It is spent on the Indian Health Service facilities out in the field.

I am certainly prepared to explore further the obvious incentive of letting the money remain in the facility from which it was collected, within parameters of high priority identified by the Indian Health Service, some of which are laid out by the Indian Health Care Improvement Act amendments, and I believe we can work that out.

Senator REID. And I think it would be beneficial to the tribes if they had a decision regarding the distribution of these funds. What is your opinion?

Dr. RHOADES. Oh, no question about that; and I believe they do have, as follows. Perhaps not as extensive as would be desired. One of the difficulties that we have working with the tribes, of course, is the fact that there are 400 and some tribes.

But in the delineation of our high priority concerns, the tribes participate in that in a number of ways. Those high priority concerns which are affected and relevant in the local service units, and in the areas. We consult with the area directors, the chief medical officers in each of those areas, and tribal representatives, and they sit down with us in putting together the list of things that we believe are most urgent.

When that is formulated, and then the budget is executed later, the tribes that have been involved do not always see the connection in which we have undertaken to follow earlier efforts, and those are explained more fully operationally by the Indian Health Service.

Senator Reid. So, what you are saying is that you would consider having the moneys being used by the entity that collects, the tribes that collects the moneys.

Dr. Rhoades. That clearly is desirable, yes.

Senator Reid. And that you feel, however, that the money that is collected should be used for something related to the Indian Health Services?

Dr. Rhoades. Oh, yes, yes; and I think that they would agree with that.

Senator Reid. Doctor, you——

Dr. Rhoades. Excuse me, Mr. Chairman, but I really should put on the record, or would like to put on the record, in response to your last question, that Dr. Porvaznik reminded me that, in fact, what the tribes themselves collect they do keep.

It is only the Indian Health Service operated programs where——

Senator Reid. I understand that, but the point we were making is that those moneys collected by the Indian Health Service should be related to the tribe in which those moneys are being collected.

Dr. Rhoades. Yes.

Senator Reid. Are the items proposed to be funded by these collections in 1990 and 1991 high priority items?

Dr. Rhoades. Yes; indeed, they are.

Senator Reid. Which is a higher priority, improving billing, or the collection abilities?

Dr. Rhoades. I am not sure, but certainly in the implementation of that activity a very high priority perhaps would indeed be to have the ability to bill nationally, because that would really be the way to increase the resources.

HIGH PRIORITY PROGRAMS

Senator Reid. These high priority program needs, for example, for medical equipment—unless you collect these moneys, it obviously won't be purchased; is that correct?

Dr. Rhoades. That is correct.

Senator Reid. If additional resources were made available to the Indian Health Service, do these proposals represent your highest priorities? And if not, what would the priorities be?

Dr. Rhoades. Those would represent our highest priorities. I perhaps ought to add one provision, and that is that if resources were available from some other source, I think it would be appropriate for us to examine very carefully the prioritization of that plan.

For example, because of the relative tenuous nature of the collections, we have chosen not to include recurring personnel costs, so that those are excluded from that.

If there were funds available from some other source I then would move personnel costs, which is obviously the basic program in the Indian Health Service, to a much higher priority level.

CONTRACT HEALTH CARE

Senator REID. During the fiscal year 1989, there were restrictions placed on contract health care. Only emergency care was provided, and the same crisis situation prevails in fiscal year 1990. What is the total service population covered under the contract care program in fiscal year 1990, and what do you project it for fiscal year 1991, and do you have the actual figures for fiscal year 1989?

Dr. RHOADES. In 1990, this current fiscal year, based upon our registration system at the Indian Health Service, the figure that we are using is 1.5 million.

In 1991, that would increase by approximately 45,000 individuals; and in 1989, the figure was 1.45 million.

Senator REID. What services have been withheld from patients needing care due to funding constraints?

Dr. RHOADES. A wide array of services. It would be easier for me to define that which is included in our current services.

Senator REID. Doctor, that isn't nearly as meaningful as those that are not provided.

Dr. RHOADES. Well, I don't think that there is any practical way that we can develop a listing of that which is not included.

Senator REID. Then tell me some of the things that are not covered that you feel should be and that are of a high priority for lack of a better word?

Dr. RHOADES. Let me begin by saying that under the present operation that the care is provided, and what we call priority 1, is the care that is needed to preserve life or limb.

And, No. 2, in the judgment of the physician seeing the patient, care which is deemed necessary to prevent progression of a condition, so that anything that doesn't meet those two criteria is either deferred or in some instances denied outright.

Kinds of care that would not be covered would be rehabilitative orthopedic surgery, with ophthalmologic care, and provision of eye glasses to adults.

Senator REID. What about cataracts?

Dr. RHOADES. You might want to ask Dr. Porvaznik about that.

Dr. PORVAZNIK. Cataracts at least will be deferred, depending upon what the funding situation looks like.

Senator REID. And how about dental work?

Dr. PORVAZNIK. Dental work perhaps makes up one of the highest categories of what we call our deferred services.

DENTAL HEALTH SERVICES

Senator REID. Do you have an idea how many Indians received dental care last year?

Dr. RHOADES. We can certainly provide it for the record. We do have that data.

[The information follows:]

DENTAL HEALTH SERVICES

In fiscal year 1989, 2,157,937 services were provided to 319,194 native Americans. The Indian Health Service direct services program provided 1,995,763 services to 293,219 native Americans and the contract program provided 162,174 services to 25,975 native Americans.

LOAN FORGIVENESS

Senator REID. Do we have loan forgiveness for dentists in the Indian Health Services?

Dr. PORVAZNIK. The answer is, yes. However, with the funds which we have available, we have determined that physicians and nurses are part of the highest priority, and for this year, physicians and nurses will take up almost all the funds that are available.

Senator REID. What is the need of American Indians for dental work?

Dr. RHOADES. We have a resource requirement methodology for dental as we do for medical, and our estimation at the present time is that we are providing about 32 percent of the dental services required based upon the number of persons seeking dental care.

This compares with a figure of about 60 percent for the U.S. population, and so about one-half of what the rest of the population is receiving.

CLOSING OF SCHURZ

Senator REID. Doctor, since the closing of the Indian Health Service Hospital in Schurz, NV, the Walker River Paiute Tribe has had less than adequate health care; and according to Anita Collins, chairman of the Walker River Paiute Tribe, the Walker River Indian Reservation had no contract health care during July, August, and September 1988–89.

Could you—and using this place in Nevada as an example, indicate why these contract services were not available?

Dr. RHOADES. With all respect to Chairman Collins, Mr. Chairman, that statement is not accurate. In 1989, over $3 million in contract health care funds were expended, and specifically after July 1989 and until the end of the fiscal year, $433,000 were expended for the Walker River Paiute Tribe in contract health care.

Senator REID. Was it during those months though that she claims that during these months there was simply nothing available?

Dr. RHOADES. Yes; it does include those months. I believe that she is mistaken.

Senator REID. It does appear that the last quarter was a little more sparse than the first—they got $3 million for the year, but then in the last quarter they received just $433,000. Would that be right?

Dr. RHOADES. That looks right, yes.

Senator REID. Well, maybe she was exaggerating a little bit. Obviously the services were cut back that last quarter.

Dr. RHOADES. I suspect that is correct. I don't have any reason to doubt those figures.

COST INCREASES

Senator **Reid**. Dr. Rhoades, you talked about a number of different assumptions that affect the Indian Health Service budget. Inflation, service population, and collections are a few of the factors that influence how far each dollar goes during the year.

Unanticipated cost increases during the year require further absorption by the programs, which means that a nursing vacancy might go unfilled for perhaps an entire year, rather than just 6 months; and if inflation is greater than projected in the President's budget, the situation is exacerbated even more.

What is the medical inflation assumption used in the fiscal year 1991 President's budget?

Dr. **Rhoades**. I believe it is 5.6 percent.

Senator **Reid**. And how does this compare with the inflation assumptions in prior years?

Dr. **Rhoades**. It is very close to the same. It has varied from 5.3 percent to about 5.8 percent.

Senator **Reid**. And what has been the actual inflation compared to projected inflation for recent IHS budgets?

Dr. **Rhoades**. In recent years?

Senator **Reid**. Yes.

Dr. **Rhoades**. The actual inflation experienced in recent years in fact has been 2 or 3 percentage points higher than that which was projected for inflation, or perhaps a little bit higher. We have actually experienced about 8 percent.

Senator **Reid**. So, it is about 50 percent off?

Dr. **Rhoades**. Well——

Senator **Reid**. Forty percent?

Dr. **Rhoades**. Yes; 40 percent.

Senator **Reid**. What impact has this continued underestimating had on the health care services available to the Indian people?

Dr. **Rhoades**. Insofar as those, the difference has been absorbed by the program, and one would have to say that in fact it has a pressing effect upon the range and the number of services that can be provided.

Senator **Reid**. How long have you been associated with the Indian Health Service?

Dr. **Rhoades**. Eight years.

ACCESS TO HEALTH CARE

Senator **Reid**. And have you noticed from when you first started until now a change in access to the services that have been provided to the Indian?

Senator **Reid**. That is a paradox, Mr. Chairman. For example, since I have been the Director of the Indian Health Service, in fact we have added considerable access to care. Unfortunately, the size of the denials during this time has also grown, and so there are two phenomena that are going on at the same time, which makes it very difficult to answer that question, particularly in my own State of Oklahoma, where the numbers have increased so dramatically.

Resources have gone up, but they just have not kept up with the increases in demand, a situation reflective of that of the rest of the United States. So, yes, my experience has been that the physicians that are in the field complain much more bitterly than ever before, because they are not able to provide the routine followup for chronic cases, in which it might be desirable to see that patient in 2 months rather than in 6 months.

It is that kind of phenomena that is going on, and I do have to say that I believe that is a bigger problem for those people who are in the system than it was some years ago.

Senator REID. Why do we have more patient visits, both in outpatient and critical care?

Dr. RHOADES. A number of reasons. The two major reasons, I believe, is that a fundamental basis of the Indian Health Service is access to care, and that is really the basis of the development of the Community Health Representative Programs, and it has been imminently successful, so that more Indian people come into the system than before.

And, second, with the growth of the Indian population itself, and that is growing at a rate of approximately 1½ times greater, I think, than the U.S. population.

POPULATION GROWTH

Senator REID. So, we have a 2.7-percent figure of annual growth in the Indian Health Service population?

Dr. RHOADES. That is a figure that we used, yes, sir.

Senator REID. But it is not reflected in your budget?

Dr. RHOADES. That is correct.

Senator REID. Why is that?

Dr. RHOADES. In the development of the budget, we began with a concept of current services, and built from that, and I think that the concept of current services is based upon those resources necessary to provide the same number of medical services as in the previous years, and that just simply does not take into account that 2.7-percent increase of the Indian population.

We attempt to deal with that, and measuring the level that is being funded, and at that point we are faced with a very, very difficult dilemma; and that is that the development of these high priority concerns that we have gone over a little bit earlier, and other special programs, weighed against the equal desirability of being able to increase our capacity. It is a terrible dilemma.

Senator REID. Doctor, I would only say—and this is not a personal criticism of you, but it is a criticism that I have of the Office of Management and Budget, which is that we play this game, you know, and you have it on your list, and you have a population that has increased for a number of years at 2.7 percent, and you have projected inflation that is really 40 percent lower than has been experienced year after year, and we are not being realistic.

Dr. RHOADES. What I—as we begin our deliberations for the 1992 budget, and in fact, I will be meeting with the Assistant Secretary of Health this afternoon on the Indian Health Service budget, and I intend to discuss with the Assistant Secretary this very question.

That is, a portrayal of the actual needs year to year of the Indian Health Service as a basis to go forward. There are many, many considerations that go into those difficult decisions in the budget, and I don't know that we will be successful, but we will continue to address this.

FACILITIES PRIORITY SYSTEM

Senator REID. Doctor, I would say that it would take someone with your experience, and my experience, or certainly those people that work there in the Office of Management and Budget, to come up with something else, and certainly something more realistic.

I mean, it would be great to look over these figures and come up with something that is more realistic than what we have.

The Indian Health Service has developed a new methodology for establishing facility replacement and construction priorities. Implementation of the new methodology has been put on hold because of a letter last June from the Senate Select Committee on Indian Affairs, requesting deferral while further issues related to rural health care services were examined. This is correct; is it not?

Dr. RHOADES. That is correct.

Senator REID. Could you tell me why the Appropriations Committee was not consulted, particularly given explicit language in fiscal year 1989, directing that a new priority list be prepared using the revised methodology?

Dr. RHOADES. That the Appropriations Committee was not consulted on what?

Senator REID. On the deferrals.

Dr. RHOADES. Let me ask Mr. Pearson if he would answer that question.

Mr. Pearson. I think probably I could take the responsibility for that, Mr. Chairman. At the time of the request, approximately July or August of the last fiscal year, we had a revised priority system methodology ready as directed by the congressional committee. We had just made the original trial application of the list, and we received a request from the Senate Select Committee on Indian Affairs expressing concern that the priority system did not give tribes the opportunities for alternate innovative health plans, and that we were too rigid. They were also concerned that we were, they had heard stories, that wewere about to close down some inpatient facilities, and so they asked that we put a hold on part of our activities.

At the time the request was made to put a hold on the activities, pending review of this issue later that year, and we thought it would be probably about 60 or 90 days. We did not anticipate that it would be much more of a delay than that.

A second factor was that the existing priority list has almost 435 million dollars' worth of facilities, and so we didn't think it would delay the pipeline any at all.

I thought I had sent carbon copies of this information to the committee, and apparently I had not. We did not anticipate more than a 60- or 90-day delay, and it turns out that as a result of scheduling difficulties the hearing only came up recently and we experienced probably a 6- or 9-month delay.

We tried to make up for that by making sure that we have sent the appropriate information to the committee.

Senator **Reid**. I am sure that Chairman Byrd would appreciate being consulted next time.

Mr. **Pearson**. Certainly.

CLOSURE OF FACILITIES

Senator **Reid**. Several years ago, a GAO report recommended several facilities should be closed for inpatient services. One of these is located in Owyhee, NV. Do you know what the status of that is?

Mr. **Pearson**. The Indian Health Service, in response again to the same letter from the Senate select committee, Mr. Chairman, agreed to suspend any efforts to promote the closure of any inpatient facilities on the priority list, or in their operation at this time.

And at that time, back in August or September, the Indian Health Service was negotiating with the tribes in the Owhyee service area about the closure of the inpatient portion of that facility, not the outpatient portion or community health.

It was just the inpatient portion, and utilizing those resources better within the community to provide services more effectively. That has been put on hold, and no further efforts have been taken toward closure, at least until such time that the Senate has been given time to consider the issue as requested.

Senator **Reid**. Last year, you indicated that a feasibility study was being discussed with respect to the future of the Owyhee Hospital. Do you know if the study has been completed?

Dr. **Rhoades**. I am sure that it has not been completed, but I believe it is continuing.

Senator **Reid**. And the status of the Owyhee Hospital; is that being handled? Tell me about the status of the Owyhee Hospital.

Mr. **Pearson**. Well, it is my understanding, and Dr. Porvaznik can correct me or add more to it, but it is my understanding that the inpatient facility is still open, as it has been for several years, but truthfully, Mr. Chairman, we really have not been providing acute medical care at that inpatient facility for many years because the average daily patient is so low—the average daily patient load is so low that it is not conducive to the provision of quality medical care.

Most acute medical care need is sent out to other facilities to receive what we consider to be a better quality of medical care from a full-time staff.

Senator **Reid**. Well, sending people out to a full-care multiple facility is not that easy though. It is a long ways from—there is no place close to Owyhee.

Mr. Pearson. That is correct.

ADDITIONAL COMMITTEE QUESTIONS

Senator **Reid**. We have lots of other questions dealing with antidrug activities, and various diseases, like diabetes and some of the renal failures that we are having with Alaskan Indians.

There are lots of other questions, and we don't have the time to do that. We would then submit to you questions in writing and we would appreciate you devoting the necessary care and time in responding to those questions with written answers.

There will be questions from some of the other Senators as well, such as Senator Stevens, Senator McClure, and Senator Domenici, and others who have asked that they be mentioned on the record that they have special interests perhaps regarding their States.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

STAFFING RESOURCES

Question. What resources would be required to staff all facilities at the 85 percent level?

Answer. The IHS does not have current information, by service unit and/or tribe, on staffing deficiency. However, the Health Services Priority System Report, which was signed by the Secretary on May 4 for submission to the Congress, includes the most current information available on funding requirements by service unit and/or tribe. The following includes information on the funding required to bring all service units and/or tribes to 60 percent, 80 percent, and 100 percent based on FY 1990 dollars.

HSPS April 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D LNF %	E % Deficiency	F HSPS Priority Category	FY 1990 Allocation (C / ΣC) X $10 mil.
ABERDEEN AREA							
RAPID CITY	$6,336,000	$3,317,000	$298,000	58%	42%	3	$60,000
CHEYENNE RIVER	$5,621,000	$3,097,000	$573,000	55%	45%	3	$115,000
FLANDREAU	$42,000	$0	$0	96%	4%	1	$0
FT BERTHOLD	$1,742,000	$688,000	$0	67%	33%	2	$0
FT TOTTEN	$3,319,000	$1,942,000	$566,000	52%	48%	3	$114,000
CROW CREEK (FT THOMP)	$243,000	$0	$0	94%	6%	1	$0
LOWER BRULE	$0	$0	$0	100%	0%	1	$0
PINE RIDGE	$13,452,000	$7,626,000	$1,801,000	54%	46%	3	$363,000
ROSEBUD	$8,107,000	$4,275,000	$442,000	58%	42%	3	$89,000
SISSETON-WAHPETON	$2,731,000	$1,254,000	$0	63%	37%	2	$0
STANDING ROCK	$8,943,000	$4,141,000	$1,340,000	50%	50%	3	$270,000
TURTLE MT	$7,330,000	$4,100,000	$870,000	55%	45%	3	$175,000
WINNEBAGO	$485,000	$0	$0	92%	8%	1	$0
OMAHA	$712,000	$0	$0	82%	18%	1	$0
YANKTON	$1,908,000	$748,000	$0	67%	33%	2	$0
SANTEE	$515,000	$280,000	$44,000	56%	44%	3	$9,000
TRENTON	$1,021,000	$536,000	$51,000	58%	42%	3	$10,000
SAC & FOX	$388,000	$166,000	$0	65%	35%	2	$0
Non-RRM AREA Svs.							
ALASKA AREA							
ANCHORAGE	$15,595,000	$6,595,000	$0	65%	35%	2	$0
KODIAK	$3,133,000	$1,813,000	$493,000	53%	47%	3	$99,000
ANNETTE ISLAND	$2,193,000	$1,370,000	$546,000	47%	53%	3	$110,000
BARROW	$3,243,000	$1,044,000	$0	71%	29%	2	$0
BRISTOL BAY	$2,063,000	$0	$0	85%	15%	1	$0
INTERIOR ALASKA	$10,660,000	$5,509,000	$338,000	59%	41%	3	$68,000
TANANA IRA	$589,000	$367,000	$146,000	47%	53%	3	$29,000
KOTZEBUE	$4,969,000	$1,702,000	$0	70%	30%	2	$0
MT. EDGECUMBE	$11,613,000	$5,966,000	$118,000	60%	40%	3	$24,000
KETCHIKAN	$2,577,000	$1,247,000	$0	61%	39%	2	$0
NORTON SOUND	$6,705,000	$3,010,000	$0	64%	36%	2	$0
YUKON KUSKOKWIM	$14,321,000	$5,705,000	$0	67%	33%	2	$0
Non-RRM AREA Svs.							
ALBUQUERQUE AREA							
AC-CA-LA	$3,674,000	$1,271,000	$0	69%	31%	2	$0
ALBUQUERQUE	$7,014,000	$2,463,000	$0	69%	31%	2	$0
MESCALERO	$2,286,000	$992,000	$0	65%	35%	2	$0
SANTA FE	$9,103,000	$4,054,000	$0	64%	36%	2	$0
SO COLORADO	$1,840,000	$892,000	$0	61%	39%	2	$0
ZUNI	$3,437,000	$897,000	$0	73%	27%	2	$0
Non-RRM AREA Svs.							

Table VII: Page 1

HSPS APRIL 18 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G FY 1990 Allocation
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D LNF %	E % Deficiency	F HSPS Priority Category	(C / ΣC) X $10 mil.
BEMIDJI AREA							
BAD RIVER	$771,000	$422,000	$73,000	56%	44%	3	$15,000
BAY MILLS	$228,000	$28,000	$0	77%	23%	2	$0
BOIS FORTE	$734,000	$403,000	$72,000	56%	44%	3	$16,000
FOND DU LAC	$2,082,000	$1,263,000	$445,000	49%	51%	3	$90,000
FOREST CO. POTAWA	$238,000	$128,000	$19,000	57%	43%	3	$4,000
GRAND PORTAGE	$190,000	$88,000	$0	63%	37%	2	$0
GRAND TRAVERSE	$19,000	$0	$0	98%	2%	1	$0
HANNAHVILLE	$173,000	$92,000	$11,000	57%	43%	3	$2,000
GREATER LEECH LAKE	$3,269,000	$1,741,000	$214,000	57%	43%	3	$43,000
KEWEENAW BAY	$557,000	$277,000	$0	60%	40%	2	$0
LAC COURTE OREILLES	$2,024,000	$1,299,000	$574,000	44%	56%	3	$116,000
LAC DU FLAMBEAU	$1,264,000	$643,000	$22,000	59%	41%	3	$5,000
LAC VIEUX DESERT	$87,000	$9,000	$0	78%	22%	2	$0
LOWER SIOUX	$150,000	$76,000	$1,000	60%	40%	3	$0
MENOMINEE	$1,858,000	$937,000	$19,000	60%	40%	3	$4,000
MILLE LACS	$397,000	$141,000	$0	69%	31%	2	$0
ONEIDA	$3,603,000	$2,301,000	$1,099,000	42%	58%	3	$221,000
PRAIRIE ISLAND SIOUX	$114,000	$41,000	$0	69%	31%	2	$0
RED CLIFF	$942,000	$592,000	$243,000	46%	54%	3	$49,000
RED LAKE	$552,000	$0	$0	93%	7%	1	$0
SAGINAW	$688,000	$377,000	$68,000	56%	44%	3	$13,000
SAULT STE. MARIE	$3,442,000	$2,082,000	$742,000	49%	51%	3	$149,000
SHAKOPEE SIOUX	$94,000	$38,000	$0	67%	33%	2	$0
SOKAOGON	$119,000	$45,000	$0	68%	32%	2	$0
ST. CROIX	$315,000	$106,000	$0	70%	30%	2	$0
STOCKBRIDGE-MUNSEE	$933,000	$479,000	$25,000	59%	41%	3	$5,000
UPPER SIOUX	$0	$0	$0	100%	0%	1	$0
WHITE EARTH	$1,898,000	$768,000	$0	66%	34%	2	$0
WISCONSIN-WINNEBAGO	$703,000	$111,000	$0	76%	24%	2	$0
Non-RRM AREA Svs.							
BILLINGS AREA							
BLACKFEET	$6,185,000	$2,506,000	$0	66%	34%	2	$0
CROW	$3,214,000	$575,000	$0	76%	24%	2	$0
FLATHEAD	$1,747,000	$9,000	$0	80%	20%	2	$0
FT BELKNAP	$1,562,000	$304,000	$0	75%	25%	2	$0
FT PECK	$6,166,000	$3,181,000	$195,000	59%	41%	3	$39,000
NO CHEYENNE	$4,271,000	$2,501,000	$731,000	52%	48%	3	$147,000
ROCKY BOYS	$1,530,000	$541,000	$0	69%	31%	2	$0
WIND RIVER	$7,291,000	$3,976,000	$658,000	56%	44%	3	$133,000
Non-RRM AREA Svs.							

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D LNF %	E % Deficiency	F HSPS Priority Category	FY 1990 Allocation (C / ΣC) X $10 mil.
CALIFORNIA AREA							
UNITED IHS	$1,814,000	$812,000	$10,000	60%	40%	3	$2,000
HUPA HEALTH ASSOC	$903,000	$355,000	$0	67%	33%	2	$0
SHASTA-TRINITY	$2,385,000	$1,652,000	$919,000	35%	65%	4	$185,000
CONSOLIDATED	$940,000	$529,000	$118,000	54%	46%	3	$24,000
NORTHERN VALLEY	$2,739,000	$1,717,000	$694,000	46%	54%	3	$140,000
LASSEN	$213,000	$47,000	$0	74%	26%	2	$0
CHAPA DE (AUBURN)	$1,372,000	$882,000	$392,000	44%	56%	3	$79,000
SONOMA COUNTY	$1,313,000	$730,000	$146,000	55%	45%	3	$29,000
TUOLUMNE	$579,000	$242,000	$0	66%	34%	2	$0
CENTRAL VALLEY	$1,586,000	$875,000	$164,000	55%	45%	3	$33,000
TOIYAEE	$919,000	$303,000	$0	70%	30%	2	$0
TULE RIVER	$2,016,000	$1,282,000	$508,000	47%	53%	3	$102,000
SANTA YNEZ	$0	$0	$0	100%	0%	1	$0
RIVERSIDE/SB	$6,081,000	$3,653,000	$1,245,000	50%	50%	3	$251,000
KARUK	$718,000	$350,000	$0	61%	39%	2	$0
PI-MA-PA	$105,000	$0	$0	90%	10%	1	$0
MCDCC	$49,000	$0	$0	87%	13%	1	$0
ROUND VALLEY	$186,000	$0	$0	83%	17%	1	$0
LAKE COUNTY	$352,000	$153,000	$0	65%	35%	2	$0
SOUTHERN IHC	$1,280,000	$631,000	$0	61%	39%	2	$0
INDIAN HEALTH COUNCIL	$3,033,000	$1,932,000	$631,000	45%	55%	3	$167,000
Non-RRM AREA Svs.							
NASHVILLE AREA							
CHEROKEE	$4,169,000	$1,471,000	$0	69%	31%	2	$0
CHITIMACHA	$86,000	$0	$0	86%	14%	1	$0
CHOCTAW	$2,863,000	$737,000	$0	72%	28%	2	$0
COUSHATTA LA	$235,000	$107,000	$0	63%	37%	2	$0
ALA COUSHATTA TX	$497,000	$346,000	$195,000	34%	66%	4	$39,000
CREEK	$698,000	$334,000	$0	62%	38%	2	$0
WAMPANOAG	$83,000	$39,000	$0	62%	38%	2	$0
MALISEET	$207,000	$68,000	$0	70%	30%	2	$0
MICCOSUKEE	$0	$0	$0	100%	0%	1	$0
NARRAGANSETT	$438,000	$183,000	$0	66%	34%	2	$0
PASS. IT	$10,000	$0	$0	99%	1%	1	$0
PASS. PP	$126,000	$0	$0	91%	9%	1	$0
PENOBSCOT	$0	$0	$0	100%	0%	1	$0
PEQUOT	$431,000	$272,000	$112,000	46%	54%	3	$23,000
SEMINOLE	$542,000	$0	$0	82%	18%	1	$0
SENECA	$1,697,000	$586,000	$0	69%	31%	2	$0
ST. REGIS	$2,308,000	$1,392,000	$476,000	50%	50%	3	$96,000
TUNICA BILOXI	$118,000	$60,000	$2,000	59%	41%	3	$0
Non-RRM AREA Svs.							

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G FY 1990 Allocation (C / ΣC) X $10 mil.
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D LNF %	E % Deficiency	F HSPS Priority Category	
NAVAJO AREA							
CHINLE	$11,558,000	$5,125,000	$0	64%	36%	2	$0
CROWNPOINT	$6,599,000	$2,882,000	$0	66%	34%	2	$0
FT DEFIANCE	$8,198,000	$2,847,000	$0	69%	31%	2	$0
GALLUP	$17,685,000	$9,481,000	$1,277,000	57%	43%	3	$257,000
KAYENTA	$5,977,000	$3,028,000	$76,000	59%	41%	3	$16,000
SHIPROCK	$15,682,000	$7,928,000	$174,000	60%	40%	3	$35,000
TUBA CITY	$11,197,000	$5,449,000	$0	61%	39%	2	$0
WINSLOW	$4,764,000	$2,381,000	$0	60%	40%	2	$0
Non-RRM AREA Svs.							
OKLAHOMA AREA							
ADA	$5,645,000	$2,808,000	$0	60%	40%	2	$0
CLAREMORE	$16,842,000	$10,432,000	$4,023,000	47%	53%	3	$810,000
CLINTON	$2,671,000	$915,000	$0	70%	30%	2	$0
HASKELL	$644,000	$330,000	$0	67%	33%	2	$0
HOLTON	$294,000	$0	$0	87%	13%	1	$0
LAWTON	$10,140,000	$5,653,000	$1,166,000	55%	45%	3	$235,000
PAWNEE	$2,965,000	$344,000	$0	77%	23%	2	$0
SHAWNEE	$11,450,000	$7,516,000	$3,581,000	42%	58%	3	$721,000
TAHLEQUAH	$9,294,000	$5,161,000	$1,028,000	55%	45%	3	$207,000
WEWOKA	$5,190,000	$3,464,000	$1,738,000	40%	60%	4	$350,000
CHEROKEE	$17,643,000	$11,117,000	$4,591,000	46%	54%	3	$925,000
CHICKASAW	$4,799,000	$3,227,000	$1,655,000	39%	61%	4	$333,000
CHOCTAW	$9,900,000	$6,042,000	$2,185,000	49%	51%	3	$440,000
CREEK	$8,157,000	$5,335,000	$2,513,000	42%	58%	3	$506,000
EAGLE PASS	$204,000	$61,000	$0	72%	28%	2	$0
Non-RRM AREA Svs.							
PHOENIX AREA							
COLORADO RIVER	$835,000	$0	$0	91%	9%	1	$0
FT. YUMA	$435,000	$0	$0	92%	8%	1	$0
KEAMS CANYON	$4,395,000	$2,173,000	$0	60%	40%	2	$0
PHOENIX	$23,804,000	$13,300,000	$2,796,000	55%	45%	3	$563,000
SACATON	$4,864,000	$866,000	$0	75%	25%	2	$0
SAN CARLOS	$8,235,000	$4,949,000	$1,662,000	50%	50%	3	$335,000
WHITERIVER	$3,883,000	$0	$0	80%	20%	1	$0
U & O	$883,000	$0	$0	88%	12%	1	$0
OWYHEE	$948,000	$0	$0	84%	16%	1	$0
SCHURZ	$4,348,000	$1,413,000	$0	70%	30%	2	$0
Non-RRM AREA Svs.							

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D UNF %	E % Deficiency	F HSPS Priority Category	FY 1990 Allocation (C / ΣC) X $10 mil.
PORTLAND AREA							
COLVILLE	$1,567,000	$132,000	$0	78%	22%	2	$0
FORT HALL	$3,026,000	$1,478,000	$0	61%	39%	2	$0
KLAMATH	$1,085,000	$574,000	$64,000	58%	42%	3	$13,000
NEAH BAY	$1,099,000	$336,000	$0	71%	29%	2	$0
NORTH IDAHO	$1,983,000	$687,000	$0	69%	31%	2	$0
NW WASH	$344,000	$0	$0	93%	7%	1	$0
PUYALLUP	$2,107,000	$1,019,000	$0	61%	39%	2	$0
PUGET SOUND	$1,641,000	$0	$0	85%	15%	1	$0
TAHOLAH	$821,000	$0	$0	81%	19%	1	$0
UMATILLA	$1,039,000	$305,000	$0	72%	28%	2	$0
WARM SPRINGS	$2,718,000	$1,340,000	$0	61%	39%	2	$0
WELLPINIT	$864,000	$152,000	$0	76%	24%	2	$0
WOREGON	$5,300,000	$3,258,000	$1,216,000	48%	52%	3	$245,000
YAKIMA	$6,680,000	$3,969,000	$1,259,000	51%	49%	3	$254,000
Non-RRM AREA Svs.							
TUCSON AREA							
SELLS	$3,755,000	$74,000	$0	80%	20%	2	$0
YAQUI	$1,814,000	$738,000	$0	66%	34%	2	$0
Non-RRM AREA Svs.							

IHS AREA SUMMARY

ABERDEEN	60,895,000	32,168,000	5,985,000	60%	40%	2	1,206,000
ALASKA	77,881,000	34,328,000	1,641,000	65%	35%	2	330,000
ALBUQUERQUE	27,356,000	10,569,000	0	67%	33%	2	0
BEMIDJI	27,342,000	14,495,000	3,625,000	61%	39%	2	731,000
BILLINGS	31,967,000	13,592,000	1,584,000	65%	35%	2	319,000
CALIFORNIA	28,361,000	16,125,000	5,027,000	55%	45%	3	1,012,000
NASHVILLE	14,308,000	5,595,000	785,000	70%	30%	2	158,000
NAVAJO	81,658,000	38,919,000	1,526,000	62%	38%	2	307,000
OKLAHOMA	106,038,000	62,405,000	22,480,000	52%	48%	3	4,527,000
PHOENIX	52,030,000	22,701,000	4,456,000	67%	33%	2	896,000
PORTLAND	30,274,000	13,250,000	2,539,000	67%	33%	2	512,000
TUCSON	5,569,000	812,000	0	77%	23%	2	0
Area Exclusions							
National Exclusions							
IHS TOTAL	543,679,000	264,959,000	49,650,000	62%	38%	2	9,999,000

POSITION INCREASES

Question. The budget justification (p. 183) indicates that IHS projects its permanent positions to increase by a total of 314 positions from FY 1989 to FY 1990. What types of positions will be increased? Where will they be located?

Answer. A breakdown by types of positions and locations is as follows:

A. Information Resource Management Program --- 35 positions

Types of Positions: Mainly Computer Systems Analysts/Programmers

Locations:	
All areas except Tucson	11
Information Resource Mgmt	4
Albuquerque-West	9
Oklahoma Development Ctr	4
Alaska Development Ctr	5
Tucson Development Ctr	2

B. Staff for New Facilities ---- 116 positions

Locations:	
Sacaton, Arizona Hospital	32
Ft. Thompson, South Dakota Health Center	7
Wolf Point, Montana Health Center	24
Toppenish, Washington Health Center	53
Total	116

B. Staff for New Facilities cont.

Locations: Sacaton, Arizona Hospital ---- 32 Positions

Types of Positions:	
Data Entry	3
Medical Clerk (Typ)	4
Staff Podiatrist	1
Bio-Med Engineering Tech	1
Medical Record Tech	2
Physical Therapist	1
Radiologist Tech	1
Clinical Nurses	9
Guards	2
Nurse Specialist	1
LPN	1
P.H. Nurse	2
Field Engineer	1
Mental Health Tech	1
Dental Assistant	2
Total	32

Location: FT. Thompson, WA Health Center ---- 7 Positions

Types of Positions:

Optometrist	1
Medical Ofc - Family Practitioner	1
Medical Clerk (Typ)	1
Nutritionist/Dietician	1
Dental Assistant	1
Sanitarian	1
Community Health Nurse	1
Total	7

B. Staff for New Facilities cont.

Locations: Wolf Point, MT Health Center ---- 32 Positions

Types of Positions:

Administrative Officer	1
Medical Officer	1
Physical Therapist	1
Contract Health Staff	3
Pharmacist	1
Clerical Support	3
Clinical Nurse	1
Computer Operator	1
Supply Clerk	1
Medical Technician	1
Radiologist Technologist	1
Optometrist & Technician	2
Community Health Nurse	1
Custodial Workers	3
Health Educator	1
11 Social Worker	1
Sanitarian	1
Total	32

Location: Toppenish, WA Health Center ---- 53 Positions

Types of Positions:

Medical Officer	1
Registered Nurses	3
LPN	2
Nursing Assistant	1
Laboratory Technologist	1
Radiology Technician	1
Optometrist & Assistant	2
Audiology Assistant	1
Pharmacist & Technician	2
Clerical Support (Typ)	6
Physical Therapist & Assistant	2
Health Records Technician	1
Custodial Workers	2
Maintenance Workers	4
Supply Clerk	1
Nutritionist & Technician	2
Dental Officers	3
Dental Assistants	8
Dental Hygenist	1
Social Worker	2
M.H. Counselor	1

P.H. Nurses/Intern	3
Health Educator	1
Sanitarian.Technician	1
Total	53

C. Model Diabetes Centers ---- 28 positions

Types of Positions:	Diabetes Nurse Specialists	5
	Public Health Nutritionists or Registered Dietitians	5
	Community Health Nurses	5
	Nurse Practitioners	2
	Physician Assistants	2
	Medical Officers	3
	Clerical Support	5
	Senior Public Health Advisor (Inter-Agency Agreement with CDC)	1

Locations: Albuquerque, NM; Portland, OR;
Headquarters-West, Albuquerque, NM;
Intra-Agency Agreement with the Center for
Disease Control (CDC), and other IHS locations.

D. Mental Health Initiative ---- 122 positions

Types of Positions:	Mental Health Technicians	12
	Psychiatric Nurses	3
	Program Specialists	10
	Social Workers	41
	Medical Officers (Psy)	20
	Psychologists	32
	Clerk Typists	4

Locations: Positions will be located at IHS field offices nation-wide.

E. Health Promotion/Disease Prevention ---- 10

Types of Positions:	Physicians	3
	Health Educators	2
	Public Health Advisor	1
	Media Specialist	1
	Support Staff	3

Locations: Albuquerque Area and other IHS locations.

F. Indian Alcohol and Substance Abuse Initiative ---- 3

Types of Positions: Medical Advisor, Program Specialist, Deputy Program Officer

Locations: Albuquerque, NM Headquarters Office

Question. How does the addition of new positions comport with other aspects of the budget which portray a vacancy problem?

Answer. These new positions are being funded entirely for new initiatives and from additional funds received for those programs.

Question. Will all these new positions be filled? If so, what resources are being used to fill them?

Answer. These new positions will be filled this year and the resources for these positions were included in the FY 1990 appropriation.

STAFFING AND RESOURCE REQUIREMENTS

Question. For the record, by service unit and/or tribe, please identify the staffing and resources required to operate at 100 percent, using the most recent application of the Resource Requirement Methodology. Indicate also the current staffing complement for each service unit or tribe, using major categories such as physicians, nurses, other health professionals, medical support, and administrative support. Indicate, by location, where positions have lapsed due to funding constraints.

Answer. The IHS does not have current information, by service unit and/or tribe, on staffing deficiency. However, the Health Services Priority System Report, which was signed by the Secretary on May 4 for submission to the Congress, includes the most current information available on funding requirements by service unit and/or tribe. The following includes information on the funding required to bring all service units and/or tribes to 60 percent, 80 percent, and 100 percent based on FY 1990 dollars.

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATIOS			G
	A Additional $ for 100% Funding (TS. E) - (TS. G)	B Additional $ for 80% Funding .8 x (TS E) - (TS G)	C Additional $ for 60% Funding .6 x (TS E) - (TS G)	D LNF %	E % Deficiency	F HSPS Priority Category	FY 1990 Allocation (C / ΣC) x $10 mil
ABERDEEN AREA							
RAPID CITY	$6,336,000	$3,317,000	$290,000	58%	42%	3	$60,000
CHEYENNE RIVER	$5,621,000	$3,007,000	$573,000	51%	49%	3	$115,000
FLANDREAU	$42,000	$0	$0	96%	4%	1	$0
FT BERTHOLD	$4,742,000	$600,000	$0	67%	33%	2	$0
FT TOTTEN	$3,319,000	$1,942,000	$506,000	52%	48%	3	$114,000
CROW CREEK (FT THOMP)	$243,000	$0	$0	94%	6%	1	$0
LOWER BRULE	$0	$0	$0	100%	0%	1	$0
PINE RIDGE	$13,452,000	$7,626,000	$1,801,000	54%	46%	3	$363,000
ROSEBUD	$8,107,000	$4,275,000	$442,000	58%	42%	3	$89,000
SISSETON-WAHPETON	$2,731,000	$1,354,000	$0	63%	37%	2	$0
STANDING ROCK	$6,943,000	$4,141,000	$1,340,000	50%	50%	3	$270,000
TURTLE MT	$7,339,000	$4,100,000	$870,000	51%	49%	3	$175,000
WINNEBAGO	$465,000	$0	$0	92%	8%	1	$0
OMAHA	$712,000	$0	$0	87%	13%	1	$0
YANKTON	$1,999,000	$746,000	$0	67%	33%	2	$0
SANTEE	$515,000	$290,000	$44,000	56%	44%	3	$9,000
TRENTON	$1,821,000	$536,000	$51,000	58%	42%	3	$10,000
SAC & FOX	$380,000	$146,000	$0	70%	30%	2	$0
Non-RPM AREA Svs.							
ALASKA AREA							
ANCHORAGE	$15,995,000	$4,895,000	$0	65%	35%	2	$0
KODIAK	$3,133,000	$1,813,000	$490,000	53%	47%	3	$99,000
ANNETTE ISLAND	$2,193,000	$1,270,000	$546,000	47%	53%	3	$110,000
BARROW	$3,243,000	$1,044,000	$0	71%	29%	2	$0
BRISTOL BAY	$2,863,000	$0	$0	81%	19%	1	$0
INTERIOR ALASKA	$10,080,000	$5,300,000	$238,000	59%	41%	3	$48,000
TANANA IRA	$580,000	$357,000	$146,000	47%	53%	3	$29,000
KOTZEBUE	$4,909,000	$1,782,000	$0	70%	30%	2	$0
MT EDGECUMBE	$11,813,000	$5,990,000	$110,000	60%	40%	3	$24,000
KETCHIKAN	$2,577,000	$1,247,000	$0	61%	39%	2	$0
NORTON SOUND	$6,766,000	$3,018,000	$0	64%	36%	2	$0
YUKON KUSKOKWIM	$14,321,000	$5,765,000	$0	67%	33%	2	$0
Non-RPM AREA Svs.							
ALBUQUERQUE AREA							
AC-CA-LA	$3,674,000	$1,271,000	$0	69%	31%	2	$0
ALBUQUERQUE	$7,814,000	$2,463,000	$0	69%	31%	2	$0
MESCALERO	$2,788,000	$902,000	$0	65%	35%	2	$0
SANTA FE	$9,103,000	$4,054,000	$0	64%	36%	2	$0
SO COLORADO	$1,949,000	$602,000	$0	61%	39%	2	$0
ZUNI	$3,437,000	$807,000	$0	73%	27%	2	$0
Non-RPM AREA Svs.							

Table VII Page 1

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G FY 1990 Allocation
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D LNF %	E % Deficiency	F HSPS Priority Category	(C / ΣC) X $10 mil.
BEMIDJI AREA							
BAD RIVER	$771,000	$422,000	$73,000	56%	44%	3	$15,000
BAY MILLS	$228,000	$28,000	$0	77%	23%	2	$0
BOIS FORTE	$734,000	$403,000	$72,000	56%	44%	3	$15,000
FOND DU LAC	$2,082,000	$1,263,000	$445,000	49%	51%	3	$90,000
FOREST CO. POTAWA	$238,000	$128,000	$19,000	57%	43%	3	$4,000
GRAND PORTAGE	$190,000	$88,000	$0	63%	37%	2	$0
GRAND TRAVERSE	$19,000	$0	$0	98%	2%	1	$0
HANNAHVILLE	$173,000	$92,000	$11,000	57%	43%	3	$2,000
GREATER LEECH LAKE	$3,269,000	$1,741,000	$214,000	57%	43%	3	$43,000
KEWEENAW BAY	$557,000	$277,000	$0	60%	40%	2	$0
LAC COURTE OREILLES	$2,024,000	$1,299,000	$574,000	44%	56%	3	$116,000
LAC DU FLAMBEAU	$1,264,000	$643,000	$22,000	59%	41%	3	$5,000
LAC VIEUX DESERT	$87,000	$9,000	$0	78%	22%	2	$0
LOWER SIOUX	$150,000	$76,000	$1,000	60%	40%	3	$0
MENOMINEE	$1,856,000	$937,000	$19,000	60%	40%	3	$4,000
MILLE LACS	$397,000	$141,000	$0	69%	31%	2	$0
ONEIDA	$3,503,000	$2,301,000	$1,099,000	42%	58%	3	$221,000
PRAIRIE ISLAND SIOUX	$114,000	$41,000	$0	69%	31%	2	$0
RED CLIFF	$942,000	$592,000	$243,000	46%	54%	3	$49,000
RED LAKE	$552,000	$0	$0	93%	7%	1	$0
SAGINAW	$688,000	$377,000	$66,000	56%	44%	3	$13,000
SAULT STE. MARIE	$3,442,000	$2,092,000	$742,000	49%	51%	3	$149,000
SHAKOPEE SIOUX	$94,000	$36,000	$0	67%	33%	2	$0
SOKAOGON	$119,000	$45,000	$0	68%	32%	2	$0
ST. CROIX	$315,000	$106,000	$0	70%	30%	2	$0
STOCKBRIDGE-MUNSEE	$933,000	$479,000	$25,000	59%	41%	3	$5,000
UPPER SIOUX	$0	$0	$0	100%	0%	1	$0
WHITE EARTH	$1,898,000	$768,000	$0	66%	34%	2	$0
WISCONSIN-WINNEBAGO	$703,000	$111,000	$0	76%	24%	2	$0
Non-RRM AREA Svs.							
BILLINGS AREA							
BLACKFEET	$6,186,000	$2,506,000	$0	66%	34%	2	$0
CROW	$3,214,000	$575,000	$0	76%	24%	2	$0
FLATHEAD	$1,747,000	$9,000	$0	80%	20%	2	$0
FT BELKNAP	$1,562,000	$304,000	$0	75%	25%	2	$0
FT PECK	$6,166,000	$3,181,000	$195,000	59%	41%	3	$39,000
NO CHEYENNE	$4,271,000	$2,501,000	$731,000	52%	48%	3	$147,000
ROCKY BOY'S	$1,530,000	$541,000	$0	69%	31%	2	$0
WIND RIVER	$7,291,000	$3,975,000	$658,000	56%	44%	3	$133,000
Non-RRM AREA Svs.							

Table VII: Page 2

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G FY 1990 Allocation
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D LNF %	E % Deficiency	F HSPS Priority Category	(C / ΣC) X $10 mil.
CALIFORNIA AREA							
UNITED IHS	$1,614,000	$812,000	$10,000	60%	40%	3	$2,000
HUPA HEALTH ASSOC	$903,000	$355,000	$0	67%	33%	2	$0
SHASTA-TRINITY	$2,385,000	$1,652,000	$919,000	35%	65%	4	$185,000
CONSOLIDATED	$940,000	$529,000	$118,000	54%	46%	3	$24,000
NORTHERN VALLEY	$2,739,000	$1,717,000	$694,000	46%	54%	3	$140,000
LASSEN	$213,000	$47,000	$0	74%	26%	2	$0
CHAPA DE (AUBURN)	$1,372,000	$882,000	$392,000	44%	56%	3	$79,000
SONOMA COUNTY	$1,313,000	$730,000	$146,000	55%	45%	3	$29,000
TUOLUMNE	$579,000	$242,000	$0	66%	34%	2	$0
CENTRAL VALLEY	$1,586,000	$875,000	$164,000	55%	45%	3	$33,000
TOIYAEE	$919,000	$303,000	$0	70%	30%	2	$0
TULE RIVER	$2,016,000	$1,262,000	$508,000	47%	53%	3	$102,000
SANTA YNEZ	$0	$0	$0	100%	0%	1	$0
RIVERSIDE/SB	$6,061,000	$3,653,000	$1,245,000	50%	50%	3	$251,000
KARUK	$716,000	$350,000	$0	61%	39%	2	$0
PI-MA-PA	$105,000	$0	$0	90%	10%	1	$0
MODOC	$49,000	$0	$0	87%	13%	1	$0
ROUND VALLEY	$186,000	$0	$0	83%	17%	1	$0
LAKE COUNTY	$352,000	$153,000	$0	65%	35%	2	$0
SOUTHERN IHC	$1,280,000	$631,000	$0	61%	39%	2	$0
INDIAN HEALTH COUNCIL	$3,033,000	$1,932,000	$831,000	45%	55%	3	$167,000
Non-RRM AREA Svs.							
NASHVILLE AREA							
CHEROKEE	$4,169,000	$1,471,000	$0	69%	31%	2	$0
CHITIMACHA	$86,000	$0	$0	86%	14%	1	$0
CHOCTAW	$2,663,000	$737,000	$0	72%	28%	2	$0
COUSHATTA LA	$235,000	$107,000	$0	63%	37%	2	$0
ALA COUSHATTA TX	$497,000	$346,000	$195,000	34%	66%	4	$39,000
CREEK	$698,000	$334,000	$0	62%	38%	2	$0
WAMPANOAG	$83,000	$39,000	$0	62%	38%	2	$0
MALISEET	$207,000	$68,000	$0	70%	30%	2	$0
MICCOSUKEE	$0	$0	$0	100%	0%	1	$0
NARRAGANSETT	$438,000	$183,000	$0	66%	34%	2	$0
PASS, IT	$10,000	$0	$0	99%	1%	1	$0
PASS, PP	$126,000	$0	$0	91%	9%	1	$0
PENOBSCOT	$0	$0	$0	100%	0%	1	$0
PEQUOT	$431,000	$272,000	$112,000	46%	54%	3	$23,000
SEMINOLE	$542,000	$0	$0	82%	18%	1	$0
SENECA	$1,697,000	$586,000	$0	69%	31%	2	$0
ST. REGIS	$2,308,000	$1,392,000	$476,000	50%	50%	3	$98,000
TUNICA BILOXI	$118,000	$60,000	$2,000	59%	41%	3	$0
Non-RRM AREA Svs.							

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D LNF %	E % Deficiency	F HSPS Priority Category	FY 1990 Allocation (C / ΣC) X $10 mil.
NAVAJO AREA							
CHINLE	$11,556,000	$5,125,000	$0	64%	36%	2	$0
CROWNPOINT	$6,599,000	$2,682,000	$0	66%	34%	2	$0
FT DEFIANCE	$8,198,000	$2,847,000	$0	69%	31%	2	$0
GALLUP	$17,685,000	$9,481,000	$1,277,000	57%	43%	3	$257,000
KAYENTA	$5,977,000	$3,026,000	$75,000	59%	41%	3	$15,000
SHIPROCK	$15,682,000	$7,928,000	$174,000	60%	40%	3	$35,000
TUBA CITY	$11,197,000	$5,449,000	$0	61%	39%	2	$0
WINSLOW	$4,764,000	$2,381,000	$0	60%	40%	2	$0
Non-RRM AREA Svs.							
OKLAHOMA AREA							
ADA	$5,645,000	$2,808,000	$0	60%	40%	2	$0
CLAREMORE	$16,842,000	$10,432,000	$4,023,000	47%	53%	3	$810,000
CLINTON	$2,671,000	$915,000	$0	70%	30%	2	$0
HASKELL	$844,000	$330,000	$0	67%	33%	2	$0
HOLTON	$294,000	$0	$0	87%	13%	1	$0
LAWTON	$10,140,000	$5,653,000	$1,166,000	55%	45%	3	$235,000
PAWNEE	$2,965,000	$344,000	$0	77%	23%	2	$0
SHAWNEE	$11,450,000	$7,516,000	$3,581,000	42%	58%	3	$721,000
TAHLEQUAH	$9,294,000	$5,161,000	$1,028,000	55%	45%	3	$207,000
WEWOKA	$5,190,000	$3,464,000	$1,738,000	40%	60%	4	$350,000
CHEROKEE	$17,643,000	$11,117,000	$4,591,000	46%	54%	3	$925,000
CHICKASAW	$4,799,000	$3,227,000	$1,655,000	39%	61%	4	$333,000
CHOCTAW	$9,900,000	$6,042,000	$2,185,000	49%	51%	3	$440,000
CREEK	$8,157,000	$5,335,000	$2,513,000	42%	58%	3	$506,000
EAGLE PASS	$204,000	$61,000	$0	72%	28%	2	$0
Non-RRM AREA Svs.							
PHOENIX AREA							
COLORADO RIVER	$835,000	$0	$0	91%	9%	1	$0
FT. YUMA	$435,000	$0	$0	92%	8%	1	$0
KEAMS CANYON	$4,395,000	$2,173,000	$0	60%	40%	2	$0
PHOENIX	$23,804,000	$13,300,000	$2,796,000	55%	45%	3	$563,000
SACATON	$4,664,000	$866,000	$0	75%	25%	2	$0
SAN CARLOS	$8,235,000	$4,949,000	$1,662,000	50%	50%	3	$335,000
WHITERIVER	$3,683,000	$0	$0	80%	20%	1	$0
U & O	$683,000	$0	$0	88%	12%	1	$0
OWYHEE	$948,000	$0	$0	84%	16%	1	$0
SCHURZ	$4,348,000	$1,413,000	$0	70%	30%	2	$0
Non-RRM AREA Svs.							

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G FY 1990 Allocation
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D UNF %	E % Deficiency	F HSPS Priority Category	(C / ΣC) X $10 mil.
PORTLAND AREA							
COLVILLE	$1,567,000	$132,000	$0	78%	22%	2	$0
FORT HALL	$3,026,000	$1,478,000	$0	61%	39%	2	$0
KLAMATH	$1,085,000	$574,000	$64,000	58%	42%	3	$13,000
NEAH BAY	$1,099,000	$336,000	$0	71%	29%	2	$0
NORTH IDAHO	$1,983,000	$687,000	$0	69%	31%	2	$0
NW WASH	$344,000	$0	$0	93%	7%	1	$0
PUYALLUP	$2,107,000	$1,019,000	$0	61%	39%	2	$0
PUGET SOUND	$1,641,000	$0	$0	85%	15%	1	$0
TAHOLAH	$821,000	$0	$0	81%	19%	1	$0
UMATILLA	$1,039,000	$305,000	$0	72%	28%	2	$0
WARM SPRINGS	$2,718,000	$1,340,000	$0	61%	39%	2	$0
WELLPINIT	$864,000	$152,000	$0	76%	24%	2	$0
WOREGON	$5,300,000	$3,258,000	$1,216,000	48%	52%	3	$245,000
YAKIMA	$6,680,000	$3,969,000	$1,259,000	51%	49%	3	$254,000
Non-RRM AREA Svs.							
TUCSON AREA							
SELLS	$3,755,000	$74,000	$0	80%	20%	2	$0
YAQUI	$1,814,000	$738,000	$0	66%	34%	2	$0
Non-RRM AREA Svs.							

IHS AREA SUMMARY

ABERDEEN	60,895,000	32,168,000	5,985,000	60%	40%	2	1,205,000
ALASKA	77,881,000	34,328,000	1,641,000	65%	35%	2	330,000
ALBUQUERQUE	27,356,000	10,569,000	0	67%	33%	2	0
BEMIDJI	27,342,000	14,495,000	3,625,000	61%	39%	2	731,000
BILLINGS	31,967,000	13,592,000	1,584,000	65%	35%	2	319,000
CALIFORNIA	28,361,000	16,125,000	5,027,000	55%	45%	3	1,012,000
NASHVILLE	14,308,000	5,595,000	785,000	70%	30%	2	158,000
NAVAJO	81,658,000	38,919,000	1,526,000	62%	38%	2	307,000
OKLAHOMA	106,038,000	62,405,000	22,480,000	52%	48%	3	4,527,000
PHOENIX	52,030,000	22,701,000	4,458,000	67%	33%	2	898,000
PORTLAND	30,274,000	13,250,000	2,539,000	67%	33%	2	512,000
TUCSON	5,569,000	812,000	0	77%	23%	2	0
Area Exclusions							
National Exclusions							
IHS TOTAL	543,679,000	264,959,000	49,650,000	62%	38%	2	9,999,000

Question. Last year, Congress provided $3 million for a loan repayment program for IHS to offer as an incentive in the recruitment of needed medical personnel. What funding is proposed in the budget for this purpose in FY 1991? Does this include funds anticipated from third party collections?

Answer. For FY 1991, we propose to fund the loan repayment program as follows:

$3 million from the direct appropriation, and an additional

$4 million from third party collections, if resources are available.

Question: Why aren't the appropriated funds identified in the budget justification?

Answer: The loan repayment program was initially appropriated as a part of the Hospitals and Clinics budget activity. Future submissions will more fully discuss this program activity.

Question. What criteria were used in determining who would be eligible for the loan repayment program?

Answer. Eligibility criteria for the FY 1990 loan repayment program are as follows:

- Applicants must be health professionals who:
    - are U.S. citizens;
    - are committed to practice at an IHS Retention/Recruitment Priority Site (RRPS), demonstrated by enclosing a signed contract to serve at such a site with the application;
    - are free to begin service on or before September 30, 1990, in a full-time clinical practice for at least two continuous years in an approved IHS RRPS; and
    - have a valid, unrestricted license to practice in one of the 50 States.

Question. How many persons were considered for the program in FY 1990? What was the total extent of their debt?

Answer. The 1990 loan repayment cycle is not yet complete. To date, we have received applications from 200 people, whose total estimated debt load is $4,634,060.

Question. How many individuals actually received assistance under this program in FY 1990? What was their average debt load?

Answer. Thus far, in the FY 1990 program cycle, 61 new commitments have been made. Their estimated average debt load is $36,867. Other individuals receiving assistance in FY 1990 are those who entered the program in FY 1988 and FY 1989. There are 288 of these people. Their average debt load upon entering the program was $23,392.

Question. For those considered, but not hired, can you summarize the reasons?

Answer. The primary reasons for people not being accepted into the loan repayment program are:

- The person applied to the program but decided not to work for the IHS.
- The person's profession was not in the high priority category in their year of application. For example, only physicians and nurses were funded in FY 1988.
- The person was ineligible for the program because he/she was not an IHS employee. In FY 1988 and FY 1989, Congress only authorized participation in the program by persons working in the IHS. This meant that IHS employees assigned to tribal programs could participate in the program but employees of those programs could not. This situation changed in FY 1990. Employees of tribal programs, programs funded under the "buy-Indian" Act, and urban Indian health programs funded under Title V of P.L. 100-713 may now participate in the loan repayment program.
- For professionals other than physicians and nurses, the individuals are working at facilities which are not high enough on the priority list to qualify for funding.

Question. Do you have any estimate as to the number of physicians and nurses that you would have been able to hire had you had additional loan repayment resources?

Answer. No. It is difficult to estimate this.

Question. Are tribal contractors able to participate in this program to help in their recruitment efforts. If not, why not?

Answer. Tribal contractors who meet the criteria established in P.L. 100-713 participate in this program for FY 1990. The criteria is as follows:

> Any health program or facility funded wholly or in part by the IHS for the benefit of Indians and administered by any Indian tribe or tribal or Indian organization pursuant to a contract under the Indian Self-Determination Act, orsection 23 of the Act of April 30, 1908 (25 U.S.C. 47), popularly known as the 'Buy Indian' Act.

Question. Were any new individuals added in FY 1990, or were the funds used solely to continue assistance for those individuals funded the previous year?

Answer. New individuals have been, and will continue to be, added in FY 1990. Commitments have been made to 40 individuals to date.

Question. What is the anticipated number of new participants who will be added to the program in FY 1991?

Answer. The President's budget request of $7 million ($3 million appropriations, $4 million private collection) would support approximately 301 participants (215 continuing, 86 new). Our experience shows that we can fund approximately 43 professionals in the program per million dollars appropriated.

ACCREDITATION

Question. The budget justification also indicates that 41 of the 43 IHS hospitals are accredited. What is the plan for attaining accreditation for the remaining 2 hospitals?

Answer. One of the hospitals (Ft. Yates, North Dakota) has applied for survey but as of this time has not been notified of the planned date for the survey. The other hospital (Owyhee, Nevada) has just been certified by Medicare (HCFA) for the coming year and plans to apply for accreditation survey by the Joint Commission during FY 1991. The sharp increase in accreditation, especially in the Aberdeen Area, is worthy of special note. It was not expected that this success could have been achieved. It is a tribute to the diligence and labor of the Area Director and the staffs responsible at each facility.

PRIVATE INSURANCE COLLECTIONS

Question. Why should the Committee have any confidence in your ability to secure $40 million in collections in FY 1991, given the experience to date in FY 1990? What factors have changed to justify the higher estimate?

Answer. The IHS has gained additional experience in the identification of insurance eligibles and has begun the preparation of insurance claims. The automation of the system will be implemented during the summer of 1990 and will provide an improved method of claims preparation. The main problem the IHS faces, at the present time, is the manual preparation of claims. When that problem is overcome, the actual number of claims submitted will increase many fold and the concomitant increase in collections will occur. There are the requisite number of claims to be submitted that would provide the $40 million in collections.

Question. In assuming a collection rate based on the number of Indians who have private insurance, what analysis has IHS done to identify the types of insurance and whether incurred costs can really be recovered?

Answer. IHS service population contains approximately 150,000 people with private insurance
Average of 3 out-patient visits per person = 450,000 visits
81 inpatient admissions per thousand = 12,150 admissions
12,000 admissions x 4.5 average length of stay = 54,000 days
54,000 inpatient days x $422 = $22,000,000
450,000 outpatient visits x $76 = $34,000,000

We currently estimate that there are $56 million in potential private insurance claims. The IHS usual collection experience for private insurance claims is approximately 80%. Therefore, the expected collections will be approximately $40 million in FY 1991.

Question. Are the collections which you have been successful in attaining widely dispersed, or are they coming from just a few service units?

Answer. At the present time, approximately 35 percent of the IHS facilities are actively submitting claims to insurance carriers. We are noticing an increase each month in billing activity because of billing by additional facilities.

Question. What actions are IHS undertaking to improve its collection activity.

Answer. At the present time, we are reviewing automated billing systems available in the private sector with the plan to purchase an available package rather than attempt to develop one in-house. In addition, we plan to implement and utilize, IHS-wide, standardized uniform billing forms, such as the standardized billing forms developed by HCFA.

Question. What is the policy with respect to the return of the collections received? Namely, does the money remain at the locations where it is collected, or is it pooled centrally and then reallocated. What is the statutory requirement?

Answer. The funds that are collected from the claims submitted to insurance carriers are collected at the Accounting point level (area office). The funds must then be processed through the accounting system and are then provided to each respective area office. In FY 1990 and FY 1991, it is IHS's plan to utilize the funds to purchase identified high priority items. To the greatest extent, the funds will be used at the local level to fund these high priority items. Statutory authority, contained in Section 207 of the Indian Health Care Improvement Act, states that the funds shall be used to provide health services to Indians.

Question. What incentive is there for a tribe to vigorously pursue collections, and incur collection costs, if they are not able to retain the collected funds?

Answer. Tribes will retain their collected funds, which provides incentive to collect. Tribes, as well as the IHS in general, should pursue collections since all will participate in the benefits that accrue as a result of the collections.

Question. Who makes the decisions as to how the collected funds will be spent?

Answer. The final decision rests with the Director, IHS and his immediate staff, with appropriate consultation.

Question. How many Indians in the IHS service population have private insurance that would cover their basic medical costs? What incentive do these individuals have to continue paying insurance premiums, if their costs would otherwise be covered by IHS?

Answer. IHS currently estimates that approximately 150,000 Indians have some type of basic medical insurance coverage.

A leading incentive for buying health insurance is that it is economically available as a fringe benefit at their worksites. Many Indian people specifically purchase health insurance because they do not meet the eligibility requirements of the IHS Contract Health Services (CHS) program. In addition, many other Indian people purchase health insurance because it provides them with coverage for elective and other procedures that are not within the medical priorities of the IHS CHS program. Furthermore, many Indian people purchase health insurance because they do not live within close proximity of an IHS facility where they can receive medical services.

USE OF COLLECTIONS

Question. How do these high priority program needs, particularly medical equipment, get addressed absent the projected collections?

Answer. If the projected collections do not meet the estimated levels, IHS will have to reassess its priorities relative to the level of the collections and make the necessary adjustments to its program. Whether or not all of the collections are recovered in FY 1991, IHS will continue to meet the highest priorities first.

CONTRACT CARE

Question. What is the number of Priority I and Priority II cases that IHS has been able to handle annually under the contract care program since 1985?

Answer. The number of Priority I and II cases experienced by the IHS since 1985 are provided in Tables 1 and 2.

Table 1
Number of CHS Outpatient Visits
FY 1985-1988

YEAR	IHS CONTRACT	TRIBAL CONTRACT	TOTAL
1988	175,569	168,027	343,596
1987	203,040	144,272	347,312
1986	295,227	139,076	434,303
1985	275,457	99,328	374,785

Table 2
Number of CHS Hospital Admissions
FY 1985-1988

YEAR	IHS CONTRACT	TRIBAL CONTRACT	TOTAL
1988	15,905	6,364	22,269
1987	19,456	7,182	26,638
1986	18,724	7,326	26,050
1985	19,822	6,854	26,676

Question. Dr. Rhoades, I fail to understand how IHS can continue to rely more and more on the contract health care program when you are having problems getting through the year with the existing service populations. Would the problems in contract care be exacerbated further if clinics are closed, even if those operating funds are transferred to contract care?

Answer. Yes, we believe the problems in contract care would be exacerbated if IHS clinics are closed. Currently, the IHS is able to provide only Priority I care, Urgent and Emergent, through the CHS program. CHS funds are insufficient to cover all required contractable health needs of the American Indian and Alaska Native population. Closure of the IHS clinics, which currently provide all levels of care, including urgent and emergent if staff and facilities permit, would mean services may not be available to the population at the local level and there would be increased costs to IHS for these same services through contract health referrals. IHS would have to use available CHS funds to provide all levels of care that could have been provided by direct services; i.e., the increased CHS-eligible population to be served with CHS funds, the inflationary costs of all medical procedures to be done by contract, the increased transportation costs for referral patients via air and surface for minor and major health care services. Therefore, we believe this shortfall would increase with the closure of IHS clinics.

Question. What was the "unmet need" of Priority I cases in FY 1989? Were these cases at the top of the eligible contract care list at the start of 1990?

Answer. The estimated need of Priority I cases in FY 1989 was $21 million. However, this estimate also included some "necessary" care cases, not just life threatening medical and surgical emergencies. Since patients are always referred for urgent/emergent care, these cases are not "carried over" to the next fiscal year. Certain "necessary" care cases, in the judgement of the physician, may be deferred at year end into the coming year. These cases are then considered within the overall medical priorities.

Question. What is your current projection of "unmet need" in Priority I cases for FY 1990, given last year's carryover cases and inflationary and service population increases?

Answer. Making the tenuous assumption that FY 1990 health care needs are identical to FY 1989, and using the FY 1989 estimated need of $21 million as a base, the projected FY 1990 shortfall, using the OMB 5.8 percent inflationary factor, is $22.2 million. A service population increase of 2.7 percent times $22.2 million raises this total amount to $22.8 million, assuming the new service population's health care utilization rate is identical to the FY 1989 service population's. If the Congressional FY 1990 "shortfall" appropriation of $12 million is subtracted, the remainder is $10.8 million.

Question. What happens at the end of the fourth quarter as funds are exhausted?

Answer. We plan to manage our contract care program within the amount appropriated by the Congress. This means our services will be limited throughout the year to those the IHS can afford. If, for some reason, funds are exhausted during the fourth quarter, the IHS will further restrict contract health care medical priorities.

In certain cases, funds may only be available to pay care necessary to preserve life, limb, or the senses.

Question. What resources would be necessary in contract care to fully reflect a growth in service population of 3 percent and a medical inflation rate of 8 percent in FY 1991 compared to the FY 1990 level?

Answer. Given a 3 percent service population and an 8 percent medical inflation rate compared to the FY 1990 level ($238.8 million), $265.7 million would be needed for FY 1991 to maintain the current service level of emergent and urgent care.

Question. How has the aging of the Indian population affected the delivery of contract care cases? Does this contribute to the "shortfalls" experienced recently?

Answer. The aging Indian population has affected the delivery of contract care costs dramatically. In general, the aging population consumes more costly medical care, and requires medical care more often. This is also true of the aging Indian population, which has increased the contract health services (CHS) workload. While most other Americans have Medicare Part A and B pay for medical bills, some American Indians and Alaska Natives do not qualify for Medicare. The reason for this is they have not made any contributions to the Social Security Administration program because of poor economic conditions on Indian reservations. Also, while some American Indians and Alaska Natives have Medicare Part A, many cannot afford Part B. The IHS/CHS program has to pay these costs for the uninsured elderly. Consequently, the aging Indian population contributes to the shortfall.

Question. What steps are IHS taking to reflect these costs in its estimates of necessary contract care services?

Answer. The Indian Health Service, in the management of Contract Health Services, has implemented initiatives to obtain accurate information from the IHS Areas and Service Units regarding health needs that are not being provided. The service units maintain records of deferred services and other resource needs which are reported to IHS Headquarters by the Area Offices on a regular basis. This information is utilized in the preparation of future budget projections, justifications and estimates.

Question. How much is included in the Contract Health Care budget for the fiscal intermediary in FY 1991?

Answer. Approximately $2.8 million was set aside for the fiscal intermediary from the IHS contract health service FY 1990 budget. IHS expects to continue a similar amount for FY 1991.

Question. What is the total cost of this contract? What is the duration of the contract?

Answer. The fiscal intermediary contract was executed for a three year period, from October 1, 1986 thru September 30,1989, with a one year extension to September 30, 1990. The total cost for this four year period was $7.5 million.

Question. What role did tribes have in the execution of the contract and in review of its ongoing operations?

Answer. Tribes did not have input into the actual execution of the fiscal intermediary (FI) contract. However, the Indian Health Service (IHS) held public hearings in all of the IHS Areas in compliance with the Government's Notice of Proposed Rule Making. At these hearings, Indian tribes were given the opportunity for input. When the IHS negotiated the contract with the FI, the Indian tribes' comments were taken into consideration. In regularly scheduled meetings, conferences, and forums, the IHS presents reports to the Indian tribes regarding the implementation of the FI contract. All Indian tribal recommendations that arise are considered when the contract is modified periodically. Indian tribes are kept informed of developments and improvements through a monthly newsletter published by the FI.

EROSION OF IHS BUDGET BASE

Question. What resources would be necessary to continue the same services provided in FY 1990, assuming a growth in service population of approximately 3 percent and medical inflation of 8 percent?

Answer. A 3 percent growth in the IHS service population in FY 1991 translates into approximately 33,165 additional people to be served. The natural change (births minus deaths) in the service population is at a rate of about 2.7 percent per year or a 29,848 increase in FY 1991. Newly recognized tribes account for the remaining 3,317 people in FY 1991. It follows that the largest impact on the IHS program from population growth is in terms of newborns.

In FY 1990, per capita health care expenditures for the IHS service population were $1,066. The per capita figure becomes $1,151 for FY 1991 assuming an 8 percent inflation factor. Therefore, approximately $38 million ($1,151 x 33,165) would be required in FY 1991 to continue the same level of services as provided in FY 1990 for the additional people.

Question. Please identify the FY 1991 inflationary and base assumptions used for the following items: medical care costs; supplies; equipment; and utilities.

Answer. In FY 1991 we used the inflationary assumptions for medical care costs at 5.6 percent, medical supplies at 5.6 percent, medical equipment at 5.6 percent and utilities at 3.3 percent. All non-medical program activities were provided a 3.3 percent increase, for inflation over FY 1990 costs.

Question. What actions is IHS taking to address the aging of the Indian population, and the increased costs associated with caring for these individuals?

Answer. Much of the IHS program focus has been on youth and maternal-child health care because prevention or early detection of disease has a much greater impact on health status than treating advanced chronic disease. Such emphasis on youth has been particularly striking in dental and optometric care. Much of this emphasis is further warranted because one-half of the IHS patient population is age 21 or younger.

The care of the growing elderly population, and the associated costs, are addressed within the overall clinical services program. IHS has not had any specific program to address the needs of the elderly. However, there has been increasing attention by IHS to addressing the needs of this population. This has been characterized by an increased emphasis on secondary prevention of complications in chronic diseases, and surveillance and case finding to facilitate earlier treatment. For example, there has been expansion of the Model Diabetes Centers program with a focus on prevention of diabetic eye, foot and kidney problems which occur in middle-aged or elderly patients with long-term diabetes. Treatment for patients with end-stage renal disease is rapidly expanding. Another example is the cancer program which is being established to emphasize prevention and early detection of cancer in adults.

The Strong Heart Study, sponsored by the National Heart, Lung and Blood Institute of the National Institute of Health, carried out in conjunction with the IHS, tribes, and others is an important component targeted at heart disease which presently, along with cancer, is of greatest importance to elderly people, Indian and non-Indian. Thus, the IHS continues to focus its attention on those conditions in reaching the goal of raising the health of Indian people to the highest possible level.

COSTS ASSOCIATED WITH ELDERLY CARE

Question. To what extent are the costs associated with elderly care reflected in the Resource Requirement Methodology?

Answer. Indirectly, whatever services are used by the elderly are included in the total IHS utilization. No direct costs are specifically requested for the elderly, or elderly care. The IHS does not believe that the program should be divided up into categories for various classes or groups. The comprehensive, community based program has appropriately been targeted toward youth, as pointed out earlier because the greatest gains can be made there, that is by far the largest proportion of the population, alternate resources are vastly greater for the elderly, and because when one compares excess deaths between Indians and non-Indians, these are largely concentrated in the younger ages. In fact, elderly Indians die at rates lower than that for the rest of the population.

Question. Has IHS considered the possibility of establishing a contingency fund that could only be apportioned if certain situations, such as extraordinary inflation, occurred?

Answer. The IHS has not considered this. A contingency fund would only be appropriate for unanticipated emergencies of such magnitude that IHS could not address them without additional resources. A contingency fund for anything less severe hardly seems warranted.

Question. If such a fund were established, how would it be administered?

Answer. If the fund were established, the IHS would request the release of the funds through the apportionment process.

INDIAN HEALTH FACILITIES

Question. Is the revised methodology ready to be applied? Have tribes been consulted regarding the criteria considered in evaluating facility projects?

Answer. The Indian Health Service (IHS) initiated an application of the new Priority System Methodology in September 1988. Before applying this new Priority System Methodology, the IHS solicited comments from the tribes. Several tribes responded and the IHS used their comments in developing this version of the Priority System. However, during the application of Phase I of this approved Priority System Methodology, additional suggestions of merit for modifying the Methodology were presented. The IHS interrupted the application and initiated a further review and reevaluation of the Methodology to ensure that it accurately identified and assessed construction needs.

IHS will ask tribes to review the revised Methodology and will consider their comments before approving or applying the methodology. We are nearing completion of our reevaluation and should be ready to resume Phase I of the application by June 1990.

Question. What effect has this freeze had on the existing facilities program?

Answer. This freeze on the priority status of IHS projects has had little impact on the construction program since projects on the existing priorities list have not been funded. It is a policy of the IHS facilities program to maintain a facility on the priorities list until the project is funded.

Question. How would the new facilities priority list be accommodated given the extraordinary financial resources still to be funded on the existing priority lists? Is it your assumption that new projects will not get addressed until projects already underway are completed?

Answer. The IHS Priority Lists are lists of proposed IHS and tribal projects that have the highest relative need for new construction, replacement, and/or renovation. An application of the Priority System does not generate completely new Priority Lists. Rather, each application of the Priority System generates new projects which are added to the bottom of the existing Lists to fill out the need for 10 inpatient and 10 outpatient projects.

The IHS does not have the resources nor the authority to commit resources to proceed with in-depth planning of projects not currently on the Priority Lists. In general, planning, design, and construction needs are addressed in priority order based on a project's position on a Priority List. However, because we must work on multiple projects concurrently, we could request funding for projects lower on a priority list before projects on a list are completely funded. Also, some projects lower on the list may be completed before higher projects because some projects are more complex than others and require more time for specific planning, design, and/or construction activities.

Question. For the record, please submit a copy of the current facilities priority list.

Answer.

THE IHS HEALTH FACILITIES AND STAFF QUARTERS
CONSTRUCTION PRIORITY LISTS
April 1990

HEALTH FACILITIES PRIORITY LISTS

INPATIENT	OUTPATIENT
*Anchorage, AK (Reprogrammed)	*Parker, AZ
*Pine Ridge, SD *Kotzebue, AK	*Belcourt, ND *Taos, NM
*Shiprock, NM *Ft. Belknap, MT 1/	*Tohatchi, NM *Ft. Yuma, AZ
*Ft. Defiance, AZ	*Second Mesa, AZ
*Crow, MT *Pinon, AZ 2/ Winnebago, NB 2/	*White Earth, MN
Phoenix, AZ 2/	Montezuma Creek, UT
	Stillwell, OK

STAFF QUARTERS PRIORITY LIST

*Kotzebue, AK	(50 units)
*Pine Ridge, SD	(84 units)
*Barrow, AK	(29 units)
*Belcourt, ND	(26 units)

* Partially Funded

1/ Proposed to be changed to Outpatient Health Care Facilities at Hays and Ft. Belknap.

2/ In FY 1989, funds were appropriated for planning study.

Question. Several years ago, a GAO report recommended several facilities should be closed for inpatient services. One of those is located in Owyhee, Nevada. What steps are being taken to ensure that all Indians who receive services from this hospital participate in the deliberations regarding the future of the Owyhee hospital?

Answer. Soon after receipt of the GAO report, the IHS discussed the content with all of the Tribes served by the Owyhee Service Unit. We sought their comments and recommendations in response to the report. This was followed by numerous meetings between IHS and the Tribes where this topic continued to be discussed and debated. We, therefore, believe that all of the Tribes served by this service unit have fully participation in the discussions pertaining to the future of the Owyhee hospital.

CLOSURE OF OWYHEE HOSPITAL

Question. What actions has IHS taken to address the medical care requirements of the affected tribes and to help improve cost effectiveness at those hospitals on the list?

Answer. Many of the medical care requirements of the affected tribes are being met through utilization of the private sector and funded with contract health care monies. Those patients requiring surgery, obstetrical care, intensive care, or other specialty care are already cared for through this means. The primary purpose of discontinuing inpatient care at facilities with low occupancy and reasonable access to alternative hospitals is to assure the quality of medical care. The secondary purpose is to use scarce resources in a more cost effective manner.

The cost efficiency of the hospitals named in the GAO report can best be improved by discontinuing inpatient services. An unacceptable alternative is to decrease staff which would further compromise the quality of care and patient safety.

Some have proposed to add additional health care services which are not currently being provided such as inpatient mental health services or physical medicine and rehabilitation services. Clinical services such as these are highly technical and require a full array of professionals possessing a variety of skills. In order to attract and retain professionals with these skills, and in order to assure an acceptable quality of services, there must be a minimum quantity of services provided. A population base many times larger than that of these small hospitals is required. Thus high technology services are not realistic in this setting.

It has also been suggested that low technology nursing home care should be used to fill these low occupancy hospitals. Even if this were an appropriate mission or a cost effective alternative (generally 60 beds are required to be cost-effective in a nursing home), this would not solve the quality concerns related to high technology acute care inpatient services.

HOSPITAL CLOSURES

Question. If a hospital is proposed for closure, would it be shut down entirely, or would outpatient services be continued?

Answer. The IHS has no plans to close any facility, except where a replacement facility will be constructed. However, inpatient services may be discontinued at certain locations but ambulatory and community health services would continue and in some locations be expanded. This is in keeping with the general IHS emphasis on ambulatory and community services. We would generally wish to combine closure of inpatient services with expansion of ambulatory, community, and preventive services, thus substantially increasing our ability to raise the status of health of Indian people to the highest possible level.

Question. Assuming that outpatient care was continued, would the contract health care program be the source of funding to address inpatient care needs of the affected tribes?

Answer. IHS cannot envision a situation in which ambulatory services would be discontinued. Contract health care funds would be the primary source to address inpatient care needs, but hospitals and clinics funds saved as a result of discontinuing inpatient services would be used to purchase contract care.

Question. How would you address these increased costs? What guarantees do you have that inpatient services would be available from hospitals in the surrounding areas?

Answer. Much of the cost has already been incurred since a significant portion of inpatient services are now referred out. Inpatient care at hospitals with a very low average daily patient load is cost inefficient, so that significant savings accrue. In our experience and explorations to date, we have found that most of the related rural hospitals are facing financial problems because of low occupancy and would welcome the admission of IHS patients. Discontinuing IHS inpatient services would not be proposed unless beds were available in alternative hospitals.

Question. What would be the increased transportation costs associated with relying on other hospitals via contract care mechanism?

Answer. Because most of the seriously ill or injured patients brought to these low occupancy hospitals are stabilized and then transported to regional referral hospitals for care, emergency medical systems (EMS) are already in place. There would be increased emphasis on high quality ambulatory services (a trend which is rapidly growing throughout the nation) with follow-up through community health services (PHN's and CHR's). Thus it is difficult to predict what the residual transportation needs would be.

Question. What steps can IHS take to work with tribes in seeking innovative means of providing health care services given Federal budgetary constraints?

Answer. There are several ideas which have been, are being, or should be explored between the IHS and tribes to improve access to quality health care in those isolated and rural locations which do not have reasonable access to alternative care. They include:

— The enhancement of ambulatory and community health care services with their emphasis on prevention in early detection and treatment.

— Discontinuing low volume inpatient care yet maintaining emergency room services.

- — Enhancing the emergency medical services (EMS) system. Developing holding/infirmary beds in selected locations to allow short term observation to determine if transfer to a hospital is medically necessary.
- — Networking with regional referral hospitals to provide continuous (e.g. teleradiology) or periodic (e.g., portable ultrasound) diagnostic services on site.
- — Building of tribally owned health stations for providing part-time preventive and chronic medical/dental care closer to where people live.

INDIAN HEALTH FACILITIES

Question. Have tribes approached the IHS with creative means for financing replacement facilities, such as the Warm Springs project? If so, which ones? What are the cost estimates associated with these projects? What role does IHS play in the scoping and design of these projects?

Answer. In addition to the Warm Springs Tribe's proposal for a joint-venture project, the IHS is aware that the Choctaw Nation of Oklahoma and the Nez Perce Tribe in Idaho are considering proposing creative means of financing new health care facilities. To date, however, only the Warm Springs Tribe has submitted a written proposal to IHS for evaluation. Since the service areas, proposed location of facilities, and proposed programs have not been defined for other projects, it is not possible to accurately determine the initial or recurring costs associated with these projects. Other than Warm Springs, the IHS has had no direct involvement in the proposed projects; however, before considering a joint-venture, the IHS would require a written proposal clearly defining the scope of the project, including an accurate cost estimate, and would provide technical assistance as necessary to ensure that the facility would be planned and constructed according to IHS standards.

HEADQUARTERS RELOCATION

Question. In FY 1989, Congress provided $200,000 and directed IHS to study the cost and impact of relocating its headquarters operation away from the Washington, D.C. area. Last year, your budget indicated that the study would be available last fall. The Committee has yet to receive the report. When can we expect to receive the report?

Answer. The Report to Congress is being finalized and will be transmitted to the Congress soon.

Question. What accounts for the delay?

Answer. The comprehensiveness of the Study required a much greater amount of time than initially anticipated. For example, the various cost benefit analyses and comparison of the data was very time consuming. The study quickly identified a possibility of consolidating certain Headquarter's functions in various field locations. This possibility has a great deal of merit and requires further analyses. Such consolidation, resulting in increased efficiency and expected savings, is more complicated than simply moving units, or involves certain reorganization changes. This has required considerable more time and analysis, delaying the overall report. For this reason, IHS subsequently separated the reorganization issue and related information, and the report has now been submitted.

Question. What input did you receive from tribes regarding the services to be provided if relocation is recommended?

Answer. The tribes received the report in draft for review and comment. Their comments were evaluated and considered in the recommendations contained in the report as submitted by IHS.

TRIBAL PARTICIPATION

Question. Dr. Rhoades, as a stated objective, the Indian Health Service is aiming to have 75 percent of all health services managed by tribes within ten years. I believe FY 1991 is the third year of this endeavor. Last year, you indicated that roughly 30 percent of all IHS programs were tribally-operated. The FY 1991 budget proposes an allocation between federal and tribal programs that, percentage-wise, is about the same as last year's proposal, which Congress rejected. How is IHS going to attain a goal of 75 percent in ten years if in the first three years, there has been relatively little change in the level of tribal contracting?

Answer. Tribes and tribal organizations have not had a real opportunity to determine whether or not self-determination contracting is appropriate for their situation. Several potential barriers to tribal health administration have inhibited expansion of P.L. 93-638 contracting. First, uncertainty over total P.L. 93-638 contract funding levels discourages tribes and tribal organizations from even considering exercise of their rights under P.L. 93-638 to assume responsibility for health service programs. The President's FY 1991 Budget proposes separate requests for tribal health programs provides additional assurance to tribes and tribal organizations that resources necessary for full support of P.L. 93-638 health services delivery are available.

Second, Risk theory predicts that the perception that contract indirect costs are under-funded discourages tribes and tribal organizations from assuming responsibility for health services delivery. The President's FY 1991 Budget proposes to address this barrier through full funding of the estimated $78 million in FY 1991 tribal contract indirect costs, as well as full funding of the estimated $23 million in contract support costs.

A third barrier to health program administration, both tribal and federal, is the lack of sufficient numbers of Native American health professionals and health program administrators, as well as the general shortage of health professionals on the reservation. The President's FY 1991 Budget proposes to correct this situation through expansion of the Indian Health Manpower program to its full statutory authorization of $12.6 million, which will fund an additional 177 health profession scholarships.

The President's FY 1991 budget also proposes to address this barrier through increased technical and management training support for existing and potential P.L. 93-638 contractors. The President's FY 1991 Budget requests $4.1 million for Tribal Health Administration management training, a 60 percent increase over the FY 1990 level of $2.5 million.

Investing in human capital may produce multiplier effects in future years as tribes and tribal organization develop expertise in various aspects of health program administration and health services delivery, and use this pool of knowledge and talent as a center-of-excellence for assisting other tribes with health program administration as well as apply it to other endeavors.

Removing the potential barriers to tribal health administration will provide greater choice for tribes and tribal organization in determining whether to assume responsibility for health services themselves or to continue to receive direct Federal health care services, and more fully meet the intent of P.L. 93-638. With these barriers removed, we anticipate an increasing rate of tribal self-determination activity which will move use toward our ten-year goal.

As the phrase self-determination implies, tribes choose to contract under P.L. 93-638; tribes can not be forced to self-determine. However, the revolutionary nature of the self-determination process --- to turn over direct Federal programs to tribal administration --- has caused concern among entrenched interests which would prefer continued direct Federal control. To help counter this natural inertia and clearly show the tribes that IHS stands with the tribe, ready to assist --- not inhibit --- the P.L. 93-638 process, we have proposed a ten-year target of having 75 percent of IHS under P.L. 93-638 contract.

We are currently in the process of promulgating regulations for P.L. 100-472, the 1988 amendments to P.L. 93-638. These amendments remove barriers to self-determination contracting that Federal Acquisition Regulations have created. It is likely that the "638" Amendments will have the effect of increasing the number of tribes who choose to contract in the future. IHS continues to seek ways to improve the delivery of health services through self-determination activities.

UNCERTAINTY IN FUNDING

Question. One of the concerns expressed by the Indian Health Service (IHS) is that tribes are hesitant to contract for their services given the uncertainty in funding levels from year-to-year. Is this correct?

Answer. Yes, uncertainty over total P.L. 93-638 contract funding levels discourage tribes and tribal organizations from even considering exercise of their rights under P.L. 93-638 to assume responsibility for health service programs. The President's FY 1991 Budget proposes separate requests for tribal health programs and provides additional assurance to tribes and tribal organizations that resources necessary for full support of P.L. 93-638 health services delivery are available.

Separate requests for tribal and Federal health services will represent a step forward in Federal-Tribal relations, confirming the Federal trust responsibility while explicitly acknowledging the government-to-government relationship through a Federal appropriation to Tribal Health Administration.

It is important to note that the direct appropriation for tribal health services represents the MINIMUM funding for that fiscal year. If additional tribes wish to self-determine, or tribes with existing P.L. 93-638 contracts to expand the contract, funds would be transferable from Federal to Tribal Health Administrations to fully fund the contract.

Additionally, the IHS issued a statement of policy with the Resource Allocation Methodology (RAM) which requires that the IHS allocate its resources on an equitable basis. One objective of the RAM is to assure that funding provided by IHS, which depends on the availability of appropriations, is determined on the same basis for both IHS and tribally operated health programs. This policy is consistent with the mandate under P.L. 93-638 to fund programs contracted under the Act at not less than the level IHS would have provided if the programs were operated by the IHS. Also, the P.L. 93-638 amendments prohibit reduction in Tribal contractor funding base except when appropriations have been reduced. This should help mitigate the feelings of uncertainty in the funding levels of tribal contracts by the Tribal leaders.

Question. What actions are IHS taking to work with tribes to help identify their funding base and ensure that program stability exists?

Answer. The IHS initiated a budget formulation process for FY 1992. Through its Area Offices, tribes and/or service units developed requests for FY 1992 that were than consolidated by the Area Offices and forwarded to Headquarters. The consolidation of the Area requests into an overall IHS budget is accomplished at a workshop where members of the National Indian Health Board representing each IHS Area participated. The IHS will continue to seek ways to improve on this process and will take the necessary actions to effect improvements when warranted.

However, only separate appropriations for tribal and Federal health service programs, as proposed in the President's FY 1991 Budget, will alleviate perceptions of arbitrary Federal actions with regard to fund availability and indeed assure tribes that resources necessary for full support of P.L. 93-638 health services delivery are available.

Question. Wouldn't you agree that a key element for the tribes is honesty in the budgeting process and a better understanding of where IHS' dollars are being spent?

Answer. Full disclosure and honesty regarding budgeting and fund allocation are crucial elements in assisting tribes in the P.L. 93-638 process. It is precisely to assure honesty and full disclosure that separate requests for tribal and Federal health services delivery are requested in the President's FY 1991 Budget.

Question. What roles do tribes have in the formulation of the IHS budget?

Answer. As responded to in a previous question, the tribes play an important role at the grass roots where actual budget formulation begins.

Question. How does this comport with the statutory requirement that tribes participate in the budget formulation process?

Answer. IHS believes that this fully complies with that requirement.

Question. What steps are you taking to create a role for tribes in the budgetary process?

Answer. A key feature of the President's FY 1991 Budget proposal for separate tribal and Federal appropriations is that a separate tribal request, given the full funding requirements of P.L. 93-638, reflects tribal priorities.

Separate requests would also approximate the Department of Interior Bureau of Indian Affairs' budget formulation system which provides roughly one-third of the budget as 'tribal priority programs,' where the tribes determine their priorities and those are the programs funded by that portion of the annual appropriations. The notable advantage of separate appropriations being that tribes have explicit knowledge and more assurance of funding levels.

We will continue to refine the budgetary process as much as possible to enhance tribal involvement.

Question. How much of IHS' budget is spent at the central office, how much at the area offices, and how much at the service unit level? Why isn't this information presented in the budget documents?

Answer. The following table represents a distribution of resources spent:

	($000) FY 1989 Actual Obligations
Headquarters	$ 61,122,159
Area Offices	120,648,499
Service Units/Tribal Contracts	819,160,079
Total	$1,000,930,737

In FY 1990 and in FY 1991 the ratio should remain approximately the same.

NOTE: The funds expended at Headquarters are for such items as personnel and support costs for Rockville and centralized billing for Federal Telecommunications System, Bureau of Employees Compensation, Service and Supply fund, etc. which benefits all operations of IHS.

ADMINISTRATIVE COSTS INCREASES

Question. Dr. Rhoades, one of the concerns expressed by tribes regarding the FY 1990 operating budget of IHS is the extent to which absorption of pay costs are affecting the delivery of health care services. What is the total amount of civilian pay increases faced by IHS in FY 1990? For FY 1991? How much have you budgeted in each year?

Answer. A breakdown of the pay increases is as follows:

FY 1990 Pay Raise Estimate

Hospital & Health Clinics	9,732,000
Dental Health	610,000
Mental Health	225,000
Alcoholism	6,000
Contract Health Service	18,000
Sanitation	483,000
Public Health Nursing	293,000
Health Education	51,000
Direct Operations	927,000
Grand Total Budgeted	$12,345,000

FY 1991 Pay Raise Estimate

Hospital & Health Clinics	9,405,000
Dental Health	603,000
Mental Health	332,000
Alcoholism	7,000
Contract Health Service	17,000
Sanitation	476,000
Public Health Nursing	296,000
Health Education	51,000
Direct Operations	1,008,000
Grand Total Budgeted	$12,195,000

The FY 1991 President's budget request assumes absorption of 50 percent of the FY 1991 pay raise ($6,098,000) and restores the full cost of the FY 1990 annualized pay raise ($16,458,000).

Question. In addition to the Federal pay increase, IHS is also having to absorb a special pay increase for doctors and nurses. What is the amount of these special increases faced by IHS in FY 1990?

Answer. The amount of these special increases faced by IHS in FY 1990 is $10,032,000. Since these costs were absorbed in FY 1990, the FY 1991 President's Budget includes 100 percent of these special pay increases.

Question. Are these full-year costs, or only partial-year costs?

Answer. These would be full-year requirements and would be required each year.

Question. What would be the full-year costs?

Answer. The full-year costs would be $10,032,000.

Question. Are these costs built into your FY 1991 base?

Answer. To the extent these costs are absorbed in FY 1990, the costs are included in the FY 1991 base.

Question. What efforts did IHS undertake in the budget formulation process to have these costs added to its budget?

Answer. The FY 1990 special pay increase of $10 million is for the Medical Officers' Retention Bonus (MORB) authorized by Public Law 101-189, National Defense Authorization Act, November 29, 1989. The IHS FY 1991 original budget request was sent to the Public Health Service (PHS) the first part of May 1989. By the time the Bill was enacted, final funding decisions had already been made regarding the FY 1991 request. The timing of the authorization did not allow the IHS to include these costs as part of the FY 1991 budget formulation process.

QUALITY MANAGEMENT INITIATIVE

Question. Dr. Rhoades, in response to many concerns about the management of IHS and the provision of its services, you have placed a great deal of emphasis on the Quality Management Initiative. An increase of $2,000,000 and 40 FTEs is requested in FY 1991. Specifically, how would the proposed additional resources and personnel be spent? What is the existing staffing and funding available for these functions?

Answer. The emphasis on management improvements stem from the stress placed on the administrative budget. Since 1983 the IHS health services budget has grown by approximately 30 percent, while the administrative budget has grown by 2.6 percent. The additional resources would be directed to staffing critical functions in financial management, acquisitions, and management policy, as staffing for these activities has lagged far behind that of program services. This has made it difficult to provide important reviews for these functions and to ensure adequate resource and management controls.

Following is the current staffing and funding available for these functions:

- o Management Policy - 16 FTEs, $734,000;
- o Resource Management - 20 FTEs, $970,000; and
- o Acquisitions - 21 FTEs, $1,175,000.

Question. How much is being spent on this initiative in FY 1990? Where were these resources made available from? Did you request a reprogramming?

Answer. The Indian Health Service will spend an estimated $1 million on the Quality Management Initiative (QMI) in FY 1990. The QMI activities in FY 1990 will focus on both management and health care delivery. For example, human resources development, contract care, supply management, and third party collections are targeted for a blend of management and health care delivery improvement efforts. Specifically, the funds are to pay for the travel costs, associated with work groups staffed by IHS employees; and consultants contracted to perform initial assessments. An estimated $900,000 has been spent to date. About $600,000 has been expended from Headquarter's undistributed reserves in Hospital and Clinics and the remainder from the Headquarter's Direct Operations activity. The undistributed reserves are maintained in Headquarters for special Service-wide initiatives and program improvement needs. For example, professional recruitment and retention, and research and evaluation. The use of these funds do not adversely effect program levels. The expenditure of these funds was not viewed as a reprogramming, and therefore approval was not requested.

Question. How do you plan to measure accomplishment of this initiative? What specific outcomes will be seen in FY 1990? In FY 1991?

Answer. Various efforts targeted at specific problems are well underway (for example, Medicare and Medicaid Collections, Management of Contract Health Services, Relations with External Authorities). These projects are required to not just make recommendations for improvement, but to develop action steps that actually result in improved operations with tangible outcomes. The projects have a "RESULTS" focus. Each of these projects have the following criteria for success:

- Actions must be acceptable to management;
- Projects must measure performance so improvements can be tracked (before - after measures);
- Targeted change must have high payoff potential; and
- Customer relations must be improved.

For example, one of the projects has estimated that improving the identification of alternate resource eligibility in Indian Health Service patient registration files could raise collections by up to 15 percent. This estimate is based on projections of uncovered revenue due to incomplete and inaccurate identification of patient eligibility for third party coverage. This is due often to the sheer press of patient load and inadequate staff and space to interview all patients.

Some outcomes will be seen in 1990. For example, the Public Health Service Central Supply Operation (Perry Point) is proposed to be transferred to Indian Health Service by July 1990.

Question. What is the total plan for this initiative? Is it intended to last several years? If so, at what cost?

Answer. Correction of a number of management weaknesses is expected to take some time. The plan for quality management calls for immediate corrections and long term commitment to continuous improvement and does not have an absolute end or target date. The cost for implementing these changes will fall sharply to an estimated $500,000 in FY 1991 and to $250,000 in FY 1992. It is anticipated that additional resources will be required as the IHS moves into continued quality management and correction of weaknesses identified by the Office of Inspector General and the Senate Subcommittee on Investigations. The exact magnitude of need for corrective actions will be identified through the quality management initiative.

Question. How is this initiative being focused at the service unit level? What steps have been undertaken at headquarters?

Answer. Three of the first six Quality Management Initiative (QMI) projects are addressing activities critical to Indian Health Service (IHS) service units. They are: Contract Health Services, Medicare/Medicaid, and Material Management. These projects are focused on the improvement of systems that manage contract health services, collect and expend Medicare and Medicaid funds, and purchase and distribute medical supplies vital to the delivery of health care.

Two of the first six projects are focused on activities of IHS Headquarters. They are: the Management of IHS Area and Associate Directors and Improving Relationships with External Authorities.

The final project in this group addresses Human Resource Development needs for procurement, property and supply, personnel, finance, and contracting. These are positions vital to every level of IHS operations.

Question. How do you propose to reach the most basic levels of the organization, once this renewed emphasis on quality is conveyed to mid-level management?

Answer. The Indian Health Service (IHS) appreciates the importance of engaging every IHS employee in the Quality Management Initiative (QMI), and has made a concerted effort to be as inclusive as possible from the beginning. Work group members addressing the critical management issues of the agency have been selected from every level of IHS including service units, Area Offices, and IHS Headquarters. They include both direct service providers and administrators.

In addition, IHS initiated on-going activities to keep IHS employees informed of the objectives and activities of the QMI. For example, a desk-to-desk letter from the Director describing the QMI was sent to every IHS employee. The Director of Headquarters Operations holds monthly "brown-bag" luncheon meetings with Headquarters staff to provide information and obtain their recommendations, and Headquarters managers take every opportunity to meet with IHS professional groups such as nurses and Service Unit Directors as they hold regularly scheduled meetings.

Question. How much of the total funding for this initiative is proposed to be spent by IHS? How much by consultants and contractors?

Answer. For FY 1990, Indian Health Service expects to spend about 60 percent of the Quality Management Initiative financial commitment on consultants and the remainder on staffed activities. Staff activities include work groups, focus groups, travel and training. This percentage will decrease appreciably over the next 2-3 years. The expenditures for consultants in FY 1990 represents front-end costs for assessment and organizing corrective actions where needed.

Question. What involvement have tribes had in the development of this proposal?

Answer. There has been limited tribal involvement in initiating and implementing the QMI since its onset. It is considered, at the initial stages, to be an in-house management improvement operation designed to improve the quality of services provided. As problems become clearly defined, tribal people will be involved. For example, the Contract Health Service Work Group now includes a tribal representative. The Indian Health Service acknowledges the need for tribal involvement in those aspects which interface with Indian Self-Determination.

Question. What involvement did the employees who comprise your work force have in the development of this proposal? Won't they be the individuals responsible for getting the work done?

Answer. IHS employees have been involved in the QMI effort at two levels. The first activity of the QMI was to gather perceptions of the agency and the way it functioned by interviewing IHS staff, IHS customers, and those external authorities who deal with the agency. Next, IHS took the information obtained in these interviews and developed a list of areas needing immediate attention. Employees from every level of the IHS (service units, Area Offices and Headquarters) were appointed to work groups to address the problems they had help to identify. Finally, IHS employees will most certainly be involved in the implementation of solutions developed through the QMI.

Question. Dr. Rhoades, I believe it is fair to say that a good deal of skepticism has been expressed about this initiative. The Subcommittee is concerned not about a renewed emphasis quality, but rather, about an emphasis on an initiative with a jazzy name and lots of bureaucratic buzz words. For example, one document states as a goal of the QMI to ". . . clarify and strengthen lines of accountability and responsibility throughout the IHS to insure the efficient and appropriate use of all resources". What does that really mean?

Answer. The Indian Health Service (IHS) as an organization, as well as most of it's staff, were buffeted by a series of events over the course of last spring and summer. Morale was waning rapidly and entrenchment mentality was setting in. The IHS could not long tolerate the destructive potential of those events and consequences. Dr. Rhoades decided to act and act in a highly visible way. The QMI is indeed a "Jazzy" name, one that was more born than designed. But once born, the QMI name and the broad based initiatives it symbolized, became the cornerstone of efforts to turn the corner - to show IHS staff that it had the will to confront problems and the commitment to make changes where appropriate. As for the sentence quoted, it means simply that IHS believes some problems have arisen from indistinct delegations of authority, from imprecise instructions to managers, and from insufficient action to hold managers personally responsible for their programs performance.

It is widely recognized that the organization of the IHS is the most complex, by several-fold, health care organization in the United States, with components where lack of communication and constant attention to lines of accountability are ever present and where continued attention is needed in order to insure accountability. For example, there is an appropriate hierarchy of managers: Director, Area Director, Service Unit Director for overseeing the program. Necessarily, at the same time are many specialists; dentists, nurses, sanitarians, nutritionists, and community health representatives. All these elements must be coordinated, innovations must be provided for, quality assurance must be maintained and many other facets specific to the health discipline itself. This requires regional and national coordinators and senior clinicians, consultants who obviously maintain extensive communication with field workers under the management in contrast to "professional" direction of the Area Directors. It can readily be seen that under these circumstances, that lines of accountability must be continuously scrutinized and reinforced in order to avoid confusion.

To this may be added the array of special emphasis programs such as diabetes, mental health, alcoholism and others created by the Congress which we believe can be readily perceived to have created extraordinary complexity for smooth, efficient, and accountable management. Space precludes elaborating further.

Question. Shouldn't accountability and responsibility be a basic element of every employee's job performance?

Answer. Yes, absolutely. The Indian Health Service (IHS) is committed that accountability and responsibility become a way of life for all IHS employees. As part of the initiative to promote the highest standards of integrity for IHS employees, the Quality Management Initiative (QMI) is stressing the importance of responsibility and accountability outside the normal confines of employee's job performance. By this, IHS hopes to clearly communicate expectations to all IHS employees.

Since the implementation of the QMI effort, IHS has focused on the actions necessary to enhance accountability and responsibility and has developed an agency Federal Managers Financial Integrity Act plan to assist us in addressing these needs. With the additional positions the agency has requested, IHS believes that it will begin to effectively implement this plan.

Question. How would additional resources instill accountability and responsibility?

Answer. Additional resources will not change people's attitudes. The Indian Health Service (IHS) has focused other efforts in that arena. Additional resources will allow the IHS to step up its monitoring activities, internal controls, review of contracts, analysis of budgets, and other activities that contribute to its ability to measure performance within the organization. It is not the first time it has been said, but it bears repeating, that sufficient monitoring and analysis of all IHS various operations, direct and contract, geographically dispersed throughout the United States takes considerable resources. Additional resources will be required to improve these efforts and to assure the public that the IHS is held properly accountable for the expenditure of funds. The IHS administrative oversight functions have always been sacrificed in order to provide the maximum clinical services for individual Indians. The IHS cannot sustain the program without attention to the seriously neglected management and oversight requirements.

The IHS has established the IHS Federal Manager's Financial Integrity Act (FMFIA) plan as a top management improvement priority. The managers of each program are being held accountable and responsible for the operation of their programs. Additional resources would provide badly needed FTEs for these programs to insure that internal controls are implemented and audit follow-up activities are completed.

Question. As part of its allocation to QMI from projected third party collections, IHS proposes risk management training seminars. Shouldn't these types of activities be included in the basic training and requirements of all new employees in health facilities?

Answer. Risk Management is a component of a quality assurance program (there is no direct relationship to the Quality Management Initiative). A risk management program has two functions: to decrease patient risk of injury; and, decrease the financial risk of the Federal Government to medical administrative tort claims and suits. As risk management is a new and emerging field, training of the broad range of health care providers and support staff is necessary. An intensive effort through training seminars presented by experts both within and outside the Indian Health Service is necessary. With time, much of the effort will be institutionalized and included in new employee training.

Question. The subcommittee shares your concern about quality, but not at the expense of delivering basic health care services to the people you serve. Why are all these additional resources necessary, when the focus should really be to do assigned jobs better?

Answer. The report of the Special Committee on Investigations of the Senate Select Committee on Indian Affairs and various reports by the Office of Inspector General mandate that attention absolutely must be given to the seriously neglected administrative support and oversight functions, which have so long been neglected. As noted previously, since 1983 the program budget has increased by 30 percent, while the administrative budget has grown by 2.6 percent.

The Indian Health Service (IHS) Quality Management Initiative (QMI) grew out of a series of events. These included the elevation of the IHS to an agency of the Public Health Service, which brought increased responsibilities and corresponding levels of scrutiny. For example, this scrutiny has come from the Special Committee on Investigations of the Senate Select Committee on Indian Affairs, and the Department's Office of Inspector General. These, in addition to our ongoing reviews and oversight activities have identified weaknesses which will require resources to correct. These include staffing, training and systems improvements.

Over the past 8-10 years, the budget focus has been almost entirely on the delivery of health care, for example, the recruitment and retention of physicians and other health professional personnel and increasing health services delivery. Little attention has been given to maintaining adequate administrative support. The IHS has not lost sight of the goal to turn these management improvements into increased levels and quality of care to the American Indian and Alaska Native people.

ANTI-DRUG ACTIVITIES

Question. In the 1986 and 1988 Omnibus Drug Bills, and in Chairman Byrd's Anti-Drug Funding Amendment last year, resources have been authorized and made available to IHS to help combat alcohol and substance abuse. The regional treatment centers in the Albuquerque, Nashville, Navajo, and Oklahoma City Areas have been renovated and are operational. Two different centers in Alaska are operational, but additional renovations are necessary. Aberdeen, Phoenix, and Portland remain to be completed, and Bemidji, California, and Billings will operate under contract arrangements. What is the average operational funding made available per center in FY 1990? Projected for FY 1991?

Answer. The average operational funding in FY 1990 is $934,800 per center. The projected FY 1991 level would be approximately $986,214 (which includes a 5.6 percent inflation rate).

Question. Does this allow them to operate at full capacity? Will each center that is operational have all it staff positions filled?

Answer. The present funding level does not allow the regional treatment centers to operate at full capacity. Approximately 80 percent of staffing needs are being met at the current funding level.

Question. Are interim services being provided in Phoenix, Aberdeen, and Portland until their facilities become operational?

Answer. Currently the Phoenix, Aberdeen and Portland Areas are purchasing adolescent acute residential chemical dependency treatment from the private sector until their centers are operational.

Question. As indicated in the President's budget (p. 83) three additional centers will become operational in FY 1991 or FY 1992 while only increasing operating funds by $549,000. Is this correct?

Answer. This is correct. These three additional centers will be funded at the same level as the other centers utilizing the resources currently allocated to the respective Areas.

Question. What funds will be available for the purchase of anti-drug services in those areas that have chosen to operate under contract? Have costs remained constant for these areas?

Answer. The Indian Health Service is currently providing funding in the amount of $934,800 per year for all Areas including those who choose to operate under contract. Costs have increased for inflationary reasons and unmet staffing and other support cost are also in existence.

Question. What is the estimated cost necessary to complete renovation of the Alaska centers in Sitka and Fairbanks?

Answer. The current estimated cost for renovation of the Alaska Centers is $1.8 million.

Question. What is the cost estimate to complete renovation of the center in Phoenix?

Answer. The current estimated cost for renovation of the proposed youth regional treatment center for the Phoenix Area is $1.8 million. This cost supports the renovation of a federal facility as a pre-treatment center at Schurz, Nevada ($600,000), and extensive renovation of a leased tribal facility at Sacaton, Arizona ($1.2 million). Renovation of the Sacaton facility will enable the Phoenix Area to provide inpatient treatment for youth, facilities for family treatment, and a capacity for training substance abuse counselors. Each capacity is inter-dependent and allows for expansion of treatment to a maximum of 40 beds for the two facilities rather than the original 24 beds.

Question. Has a decision been reached regarding the treatment center for Portland Area? Where will it be located? What is the cost estimate?

Answer. The Portland Area regional treatment center is to be located in Spokane, Washington. A specific site location has been identified. The Portland Area is proposing to construct a new facility. The current cost estimate is $3.8 million.

Question. Why hasn't the Indian Health Service requested funds to complete the construction and rehabilitation work necessary to make these centers operational?

Answer. The funding request was based on renovation of existing Federally-owned facilities.

AIDS FUNDING

Question. In FY 1990, the administration proposed to consolidate all funding for AIDS, so that all affected programs would receive resources in a manner that reflected priority for AIDS research, treatment, and education. Subsequent to House and Senate action on the Interior appropriation bill, the Labor, Health and Human Services, and Education subcommittees opted to transfer the funding back to the affected agencies, except for IHS, which is outside their jurisdiction. Direction was contained in the Statement of the Managers that approximately $1,000,000 was to be made available from the Public Health Service to IHS for these programs. Have you received the funding yet?

Answer. No, however; the Public Health Service has informed us that $978,000 will be made available to IHS, by April 30, 1990 as the target date.

Question. What accounts for the delay? What actions has IHS taken to request the funds?

Answer. IHS has held ongoing discussion of this matter with PHS and as stated earlier, we expect to receive the funds by April 30, 1990.

Question. Has the Secretary failed to make this a priority? Doesn't the Public Health Service care about AIDS as an issue in Indian country?

Answer. The Secretary places a high priority on AIDS and has established a special office to coordinate all AIDS activities, the National AIDS Program Office, located in the Office of the Assistant Secretary for Health. Unfortunately, Section 213 of the FY 1990 Labor/HHS appropriation act stipulated that HIV/AIDS funds for FY 1990 were not to be transferred between appropriations. This presented a somewhat complex problem which was cooperatively resolved within the PHS and as mentioned earlier, will be made available to the IHS by April 30.

In addition, agencies of the Public Health Service have provided training and technical assistance in AIDS prevention and additional funding to the IHS and Indian communities. The Centers for Disease Control has provided training and funds, and the Office of Minority Health has provided community-based prevention funds.

Question. When will the funds be transferred?

Answer. At present, CDC, HRSA, and ADAMHA are preparing interagency agreements with IHS. The projected date for implementation of the agreements is April 30, 1990.

Question. How does IHS propose to allocate the funds directed by Congress?

Answer. The IHS will allocate the HIV funds in the following manner:

Surveillance	$ 20,000
Total Reservation Based Prevention Programs	302,000
Total Urban Indian Programs	345,000
Clinical Health Services Research Delivery Services (AIDS/HIV Treatment)	311,000
Grand Total HIV/AIDS	$978,000

Question. Absent the allocation of these funds, how are those Indians with the HIV virus being treated?

Answer. Indian persons with AIDS will be incorporated within the existing IHS clinical services system, and will receive treatment for their illness within the established priorities for medical care.

Question. In FY 1991, IHS is requesting funding of $1,013,000 for AIDS-related prevention, education, and treatment programs. Of the total requested, $268,000 is recommended for patient care services. As of November, 1989, there were 156 cumulated cases of AIDS in American Indian and Alaska Natives. Assuming that all of these cases fall within the IHS delivery system, this results in an average of just over $1700 available per patient for treatment. What have been the average costs for treatment per case? Are the remaining costs being absorbed within the clinical services or contract health care programs?

Answer. As of November 1989, The IHS was following 44 of the reported cumulative total of 156 cases of AIDS and was treating 24 of the cases. The majority of these are not within the IHS service area. It must be further noted that over one half of this cumulative total of CDC recorded cases have died.

Regarding costs of care: Contract Health Care costs for two terminal AIDS patients were $125,000; Drug therapy is estimated to be: $4,000/patient/year for AZT, and $3500/patient/year for Pentamadine. Overall, the IHS expended $77,000 for AIDS drugs and $165,000 for Contract Health Care services. Two high cost patients were funded by the IHS catastrophic fund. Other costs were absorbed within the overall clinical services program, but were not specifically tracked.

Question. What provisions are being made to ensure that these patients are receiving the proper care?

Answer. The IHS clinicians follow the recommendations of the Public Health Service, and treatment and patient care is provided in a manner consistent with established standards of care.

Question. What other Federal and private agencies are participating in IHS' AIDS prevention program? What resources are they contributing?

Answer. The IHS and community based Indian organizations have received assistance from a variety of private and governmental sources:

Centers for Disease Control
Office of Minority Health
Bureau of Indian Affairs
Administration for Native Americans
Various State Governments using CDC AIDS prevention funds
American Red Cross

INDIAN HEALTH CARE IMPROVEMENT FUND

Question. Last year, Congress provided $10 million for the Indian Health Care Improvement Fund. These resources are to be allocated to help raise the level of care provided nationally to a more equitable level, by helping to address unmet needs. Have these funds been allocated yet?

Answer. Yes, the allocations were determined in February with Advice of Allowance letters being sent to the Area Offices on

March 2, 1990.

Question. What factors were considered in the distribution of these funds?

Answer. Factors used in the determination of the distribution were those employed by the IHS resource allocation methodology and included projected user population, health status, and current services provided. These factors were incorporated into the health services priority system methodology meeting the single criteria that allocation would be made to those operating units having 41 percent deficiency level or greater.

Question. Does the use of "Years of Productive Life Lost" as an allocation factor skew the results towards areas which experience a high rate of premature deaths and infant mortality?

Answer. The health status factor ("Years of Productive Life Lost" - YPLL) is designed to identify and assign funding preference to those Areas whose population is lowest in health status. The YPLL is a mortality statistic that is weighted for age at death, which makes it sensitive to early or premature death. Since Indian youth experience a disproportionate number of deaths, compared to the general population, IHS uses this factor in determining early intervention programs. This is a widely used index which permits the targeting of resources to places with great medical burdens as reflected in YPLL.

Question. In total, at what percentage of need are Indians funded for health care? For the record, please provide detail regarding how this spread by Area, and by service unit or tribe.

Answer. The overall Level of Need Funded for the IHS is 62 percent. P.L. 94-437, as amended by P.L. 100-713, Sec. 201(c)4, required the IHS to allocate $10,000,000, Indian Health Care Improvement Fund, to those operating units showing greater than 40 percent deficiency level. Sixty-one operating units were allocated funds, ranging in amounts of $921,000 to Cherokee, Oklahoma to $2,000 to United Indian Health Service of California. The following provides a list of all operating units by Area and their level of need funded - Column D, as determined by the Health Services Priority System methodology.

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G FY 1990 Allocation
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D LNF %	E % Deficiency	F HSPS Priority Category	(C / ΣC) X $10 mil.
ABERDEEN AREA							
RAPID CITY	$6,336,000	$3,317,000	$298,000	58%	42%	3	$60,000
CHEYENNE RIVER	$5,621,000	$3,097,000	$573,000	55%	45%	3	$115,000
FLANDREAU	$42,000	$0	$0	96%	4%	1	$0
FT BERTHOLD	$1,742,000	$688,000	$0	67%	33%	2	$0
FT TOTTEN	$3,319,000	$1,942,000	$566,000	52%	48%	3	$114,000
CROW CREEK (FT THOMP)	$243,000	$0	$0	94%	6%	1	$0
LOWER BRULE	$0	$0	$0	100%	0%	1	$0
PINE RIDGE	$13,452,000	$7,626,000	$1,801,000	54%	46%	3	$363,000
ROSEBUD	$8,107,000	$4,275,000	$442,000	58%	42%	3	$89,000
SISSETON-WAHPETON	$2,731,000	$1,254,000	$0	63%	37%	2	$0
STANDING ROCK	$6,943,000	$4,141,000	$1,340,000	50%	50%	3	$270,000
TURTLE MT	$7,330,000	$4,100,000	$870,000	55%	45%	3	$175,000
WINNEBAGO	$485,000	$0	$0	92%	8%	1	$0
OMAHA	$712,000	$0	$0	82%	18%	1	$0
YANKTON	$1,908,000	$746,000	$0	67%	33%	2	$0
SANTEE	$515,000	$280,000	$44,000	56%	44%	3	$9,000
TRENTON	$1,021,000	$536,000	$51,000	58%	42%	3	$10,000
SAC & FOX	$388,000	$166,000	$0	65%	35%	2	$0
Non-RRM AREA Svs.							
ALASKA AREA							
ANCHORAGE	$15,595,000	$6,595,000	$0	65%	35%	2	$0
KODIAK	$3,133,000	$1,813,000	$493,000	53%	47%	3	$99,000
ANNETTE ISLAND	$2,193,000	$1,370,000	$546,000	47%	53%	3	$110,000
BARROW	$3,243,000	$1,044,000	$0	71%	29%	2	$0
BRISTOL BAY	$2,063,000	$0	$0	85%	15%	1	$0
INTERIOR ALASKA	$10,880,000	$5,509,000	$338,000	59%	41%	3	$68,000
TANANA IRA	$589,000	$367,000	$146,000	47%	53%	3	$29,000
KOTZEBUE	$4,969,000	$1,702,000	$0	70%	30%	2	$0
MT. EDGECUMBE	$11,813,000	$5,966,000	$118,000	60%	40%	3	$24,000
KETCHIKAN	$2,577,000	$1,247,000	$0	61%	39%	2	$0
NORTON SOUND	$6,705,000	$3,010,000	$0	64%	36%	2	$0
YUKON KUSKOKWIM	$14,321,000	$5,705,000	$0	67%	33%	2	$0
Non-RRM AREA Svs.							
ALBUQUERQUE AREA							
AC-CA-LA	$3,674,000	$1,271,000	$0	69%	31%	2	$0
ALBUQUERQUE	$7,014,000	$2,463,000	$0	69%	31%	2	$0
MESCALERO	$2,288,000	$992,000	$0	65%	35%	2	$0
SANTA FE	$9,103,000	$4,054,000	$0	64%	36%	2	$0
SO COLORADO	$1,840,000	$892,000	$0	61%	39%	2	$0
ZUNI	$3,437,000	$897,000	$0	73%	27%	2	$0
Non-RRM AREA Svs.							

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D UNF %	E % Deficiency	F HSPS Priority Category	FY 1990 Allocation (C / ΣC) X $10 mil.
BEMIDJI AREA							
BAD RIVER	$771,000	$422,000	$73,000	56%	44%	3	$15,000
BAY MILLS	$228,000	$28,000	$0	77%	23%	2	$0
BOIS FORTE	$734,000	$403,000	$72,000	56%	44%	3	$15,000
FOND DU LAC	$2,082,000	$1,263,000	$445,000	49%	51%	3	$90,000
FOREST CO. POTAWA	$238,000	$128,000	$19,000	57%	43%	3	$4,000
GRAND PORTAGE	$190,000	$88,000	$0	63%	37%	2	$0
GRAND TRAVERSE	$19,000	$0	$0	98%	2%	1	$0
HANNAHVILLE	$173,000	$92,000	$11,000	57%	43%	3	$2,000
GREATER LEECH LAKE	$3,269,000	$1,741,000	$214,000	57%	43%	3	$43,000
KEWEENAW BAY	$557,000	$277,000	$0	60%	40%	2	$0
LAC COURTE OREILLES	$2,024,000	$1,299,000	$574,000	44%	56%	3	$116,000
LAC DU FLAMBEAU	$1,264,000	$643,000	$22,000	59%	41%	3	$5,000
LAC VIEUX DESERT	$87,000	$9,000	$0	78%	22%	2	$0
LOWER SIOUX	$150,000	$76,000	$1,000	60%	40%	3	$0
MENOMINEE	$1,856,000	$937,000	$19,000	60%	40%	3	$4,000
MILLE LACS	$397,000	$141,000	$0	69%	31%	2	$0
ONEIDA	$3,503,000	$2,301,000	$1,099,000	42%	58%	3	$221,000
PRAIRIE ISLAND SIOUX	$114,000	$41,000	$0	69%	31%	2	$0
RED CLIFF	$842,000	$582,000	$243,000	46%	54%	3	$49,000
RED LAKE	$552,000	$0	$0	93%	7%	1	$0
SAGINAW	$688,000	$377,000	$68,000	56%	44%	3	$13,000
SAULT STE. MARIE	$3,442,000	$2,092,000	$742,000	49%	51%	3	$149,000
SHAKOPEE SIOUX	$94,000	$36,000	$0	67%	33%	2	$0
SOKAOGON	$119,000	$45,000	$0	68%	32%	2	$0
ST. CROIX	$315,000	$106,000	$0	70%	30%	2	$0
STOCKBRIDGE-MUNSEE	$933,000	$479,000	$25,000	59%	41%	3	$5,000
UPPER SIOUX	$0	$0	$0	100%	0%	1	$0
WHITE EARTH	$1,898,000	$768,000	$0	66%	34%	2	$0
WISCONSIN-WINNEBAGO	$703,000	$111,000	$0	76%	24%	2	$0
Non-RRM AREA Svs.							
BILLINGS AREA							
BLACKFEET	$6,186,000	$2,506,000	$0	66%	34%	2	$0
CROW	$3,214,000	$575,000	$0	76%	24%	2	$0
FLATHEAD	$1,747,000	$9,000	$0	80%	20%	2	$0
FT BELKNAP	$1,562,000	$304,000	$0	75%	25%	2	$0
FT PECK	$6,166,000	$3,181,000	$195,000	59%	41%	3	$39,000
NO CHEYENNE	$4,271,000	$2,501,000	$731,000	52%	48%	3	$147,000
ROCKY BOY'S	$1,530,000	$541,000	$0	69%	31%	2	$0
WIND RIVER	$7,291,000	$3,975,000	$658,000	56%	44%	3	$133,000
Non-RRM AREA Svs.							

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D LNF %	E % Deficiency	F HSPS Priority Category	FY 1990 Allocation (C / ΣC) X $10 mil.
CALIFORNIA AREA							
UNITED IHS	$1,614,000	$812,000	$10,000	60%	40%	3	$2,000
HUPA HEALTH ASSOC	$903,000	$355,000	$0	67%	33%	2	$0
SHASTA-TRINITY	$2,385,000	$1,652,000	$919,000	35%	65%	4	$185,000
CONSOLIDATED	$940,000	$529,000	$118,000	54%	46%	3	$24,000
NORTHERN VALLEY	$2,739,000	$1,717,000	$694,000	46%	54%	3	$140,000
LASSEN	$213,000	$47,000	$0	74%	26%	2	$0
CHAPA DE (AUBURN)	$1,372,000	$882,000	$392,000	44%	56%	3	$79,000
SONOMA COUNTY	$1,313,000	$730,000	$146,000	55%	45%	3	$29,000
TUOLUMNE	$579,000	$242,000	$0	66%	34%	2	$0
CENTRAL VALLEY	$1,586,000	$875,000	$164,000	55%	45%	3	$33,000
TOIYAEE	$919,000	$303,000	$0	70%	30%	2	$0
TULE RIVER	$2,016,000	$1,262,000	$508,000	47%	53%	3	$102,000
SANTA YNEZ	$0	$0	$0	100%	0%	1	$0
RIVERSIDE/SB	$6,061,000	$3,653,000	$1,245,000	50%	50%	3	$251,000
KARUK	$716,000	$350,000	$0	61%	39%	2	$0
PI-MA-PA	$105,000	$0	$0	90%	10%	1	$0
MODOC	$49,000	$0	$0	87%	13%	1	$0
ROUND VALLEY	$186,000	$0	$0	83%	17%	1	$0
LAKE COUNTY	$352,000	$153,000	$0	65%	35%	2	$0
SOUTHERN IHC	$1,280,000	$631,000	$0	61%	39%	2	$0
INDIAN HEALTH COUNCIL	$3,033,000	$1,932,000	$831,000	45%	55%	3	$167,000
Non-RRM AREA Svs.							
NASHVILLE AREA							
CHEROKEE	$4,169,000	$1,471,000	$0	69%	31%	2	$0
CHITIMACHA	$86,000	$0	$0	86%	14%	1	$0
CHOCTAW	$2,663,000	$737,000	$0	72%	28%	2	$0
COUSHATTA LA	$235,000	$107,000	$0	63%	37%	2	$0
ALA COUSHATTA TX	$497,000	$346,000	$195,000	34%	66%	4	$39,000
CREEK	$698,000	$334,000	$0	62%	38%	2	$0
WAMPANOAG	$83,000	$39,000	$0	62%	38%	2	$0
MALISEET	$207,000	$88,000	$0	70%	30%	2	$0
MICCOSUKEE	$0	$0	$0	100%	0%	1	$0
NARRAGANSETT	$438,000	$183,000	$0	66%	34%	2	$0
PASS. IT	$10,000	$0	$0	99%	1%	1	$0
PASS. PP	$126,000	$0	$0	91%	9%	1	$0
PENOBSCOT	$0	$0	$0	100%	0%	1	$0
PEQUOT	$431,000	$272,000	$112,000	46%	54%	3	$23,000
SEMINOLE	$542,000	$0	$0	82%	18%	1	$0
SENECA	$1,697,000	$586,000	$0	69%	31%	2	$0
ST. REGIS	$2,308,000	$1,392,000	$476,000	50%	50%	3	$96,000
TUNICA BILOXI	$118,000	$60,000	$2,000	59%	41%	3	$0
Non-RRM AREA Svs.							

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D LNF %	E % Deficiency	F HSPS Priority Category	FY 1990 Allocation (C / ΣC) X $10 mil.
NAVAJO AREA							
CHINLE	$11,656,000	$5,125,000	$0	64%	36%	2	$0
CROWNPOINT	$6,599,000	$2,682,000	$0	66%	34%	2	$0
FT DEFIANCE	$8,198,000	$2,847,000	$0	69%	31%	2	$0
GALLUP	$17,685,000	$9,481,000	$1,277,000	57%	43%	3	$257,000
KAYENTA	$5,977,000	$3,026,000	$75,000	59%	41%	3	$15,000
SHIPROCK	$15,682,000	$7,928,000	$174,000	60%	40%	3	$35,000
TUBA CITY	$11,197,000	$5,449,000	$0	61%	39%	2	$0
WINSLOW	$4,764,000	$2,381,000	$0	60%	40%	2	$0
Non-RRM AREA Svs.							
OKLAHOMA AREA							
ADA	$5,645,000	$2,808,000	$0	60%	40%	2	$0
CLAREMORE	$16,842,000	$10,432,000	$4,023,000	47%	53%	3	$810,000
CLINTON	$2,671,000	$915,000	$0	70%	30%	2	$0
HASKELL	$844,000	$330,000	$0	67%	33%	2	$0
HOLTON	$294,000	$0	$0	87%	13%	1	$0
LAWTON	$10,140,000	$5,653,000	$1,166,000	55%	45%	3	$235,000
PAWNEE	$2,965,000	$344,000	$0	77%	23%	2	$0
SHAWNEE	$11,450,000	$7,516,000	$3,581,000	42%	58%	3	$721,000
TAHLEQUAH	$9,294,000	$5,161,000	$1,028,000	55%	45%	3	$207,000
WEWOKA	$5,190,000	$3,464,000	$1,738,000	40%	60%	4	$350,000
CHEROKEE	$17,643,000	$11,117,000	$4,591,000	46%	54%	3	$925,000
CHICKASAW	$4,799,000	$3,227,000	$1,655,000	39%	61%	4	$333,000
CHOCTAW	$9,900,000	$6,042,000	$2,185,000	49%	51%	3	$440,000
CREEK	$8,157,000	$5,335,000	$2,513,000	42%	58%	3	$506,000
EAGLE PASS	$204,000	$61,000	$0	72%	28%	2	$0
Non-RRM AREA Svs.							
PHOENIX AREA							
COLORADO RIVER	$835,000	$0	$0	91%	9%	1	$0
FT. YUMA	$435,000	$0	$0	92%	8%	1	$0
KEAMS CANYON	$4,395,000	$2,173,000	$0	60%	40%	2	$0
PHOENIX	$23,804,000	$13,300,000	$2,796,000	55%	45%	3	$563,000
SACATON	$4,664,000	$866,000	$0	75%	25%	2	$0
SAN CARLOS	$8,235,000	$4,949,000	$1,662,000	50%	50%	3	$335,000
WHITERIVER	$3,683,000	$0	$0	80%	20%	1	$0
U & O	$683,000	$0	$0	88%	12%	1	$0
OWYHEE	$948,000	$0	$0	84%	16%	1	$0
SCHURZ	$4,348,000	$1,413,000	$0	70%	30%	2	$0
Non-RRM AREA Svs.							

HSPS APRIL 18, 1990

Table VII: RESOURCE DEFICIENCY ESTIMATES

OPERATING UNIT	RESOURCE DEFICIENCY			HSPS RATINGS			G
	A Additional $ for 100% Funding (T5: E) - (T6: G)	B Additional $ for 80% Funding .8 x (T5: E) - (T6: G)	C Additional $ for 60% Funding .6 x (T5: E) - (T6: G)	D UNF %	E % Deficiency	F HSPS Priority Category	FY 1990 Allocation (C / ΣC) X $10 mil.
PORTLAND AREA							
COLVILLE	$1,567,000	$132,000	$0	78%	22%	2	$0
FORT HALL	$3,026,000	$1,478,000	$0	61%	39%	2	$0
KLAMATH	$1,085,000	$574,000	$64,000	58%	42%	3	$13,000
NEAH BAY	$1,099,000	$338,000	$0	71%	29%	2	$0
NORTH IDAHO	$1,983,000	$687,000	$0	69%	31%	2	$0
NW WASH	$344,000	$0	$0	93%	7%	1	$0
PUYALLUP	$2,107,000	$1,019,000	$0	61%	39%	2	$0
PUGET SOUND	$1,641,000	$0	$0	85%	15%	1	$0
TAHOLAH	$821,000	$0	$0	81%	19%	1	$0
UMATILLA	$1,039,000	$305,000	$0	72%	28%	2	$0
WARM SPRINGS	$2,718,000	$1,340,000	$0	61%	39%	2	$0
WELLPINIT	$864,000	$152,000	$0	76%	24%	2	$0
WOREGON	$5,300,000	$3,258,000	$1,216,000	48%	52%	3	$245,000
YAKIMA	$6,080,000	$3,869,000	$1,259,000	51%	49%	3	$254,000
Non-RRM AREA Svs.							
TUCSON AREA							
SELLS	$3,755,000	$74,000	$0	80%	20%	2	$0
YAQUI	$1,814,000	$738,000	$0	66%	34%	2	$0
Non-RRM AREA Svs.							

IHS AREA SUMMARY

ABERDEEN	60,895,000	32,168,000	5,985,000	60%	40%	2	1,205,000
ALASKA	77,881,000	34,328,000	1,641,000	65%	35%	2	330,000
ALBUQUERQUE	27,356,000	10,569,000	0	67%	33%	2	0
BEMIDJI	27,342,000	14,495,000	3,625,000	61%	39%	2	731,000
BILLINGS	31,967,000	13,592,000	1,584,000	65%	35%	2	319,000
CALIFORNIA	28,361,000	16,125,000	5,027,000	55%	45%	3	1,012,000
NASHVILLE	14,308,000	5,595,000	785,000	70%	30%	2	158,000
NAVAJO	81,658,000	38,919,000	1,526,000	62%	38%	2	307,000
OKLAHOMA	106,038,000	62,405,000	22,480,000	52%	48%	3	4,527,000
PHOENIX	52,030,000	22,701,000	4,458,000	67%	33%	2	898,000
PORTLAND	30,224,000	13,250,000	2,539,000	67%	33%	2	512,000
TUCSON	5,569,000	812,000	0	77%	23%	2	0
Area Exclusions							
National Exclusions							
IHS TOTAL	543,679,000	264,959,000	49,650,000	62%	38%	2	9,999,000

RESOURCES NEEDED TO MEET UNMET NEEDS

Question. What resources does IHS estimate are necessary to attain a 60 percent of need level? A 100 percent level?

Answer. Approximately $50 million would be required to raise all operating units below deficiency level II up to health resources deficiency level II or no more than 40 percent deficient; and approximately $540 million would be required to raise all operating units to zero health resources deficiency. It should be noted that funding deficiency is in FY 1990 dollars and does not take into consideration future inflationary increases.

Question. For the record, please provide a table identifying all hospital and clinics funding by service unit or tribe, based on the FY 1990 allocation. Include a projected allocation for the FY 1991 budget request.

Answer. A table of the actual allocations for fiscal year 1989 (FY) to each Area Office for each line item of the budget is provided below. A table of year to date allocations for FY 1990 is also provided. For FY 1991 the allocations will depend upon the amount appropriated but, essentially, should increase for each area.

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

ALL AREAS
17-May-90

	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION				
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	FY 1990 A/ APPROPRIATION	FY 1990 RESERVE
ACTIVITY/SUB-ACTIVITY											
CLINICAL SERVICES:											
HOSPITALS & CLINICS	$439,217,900	$19,532,400	$458,750,300	$191,985,400	$8,460,100	$200,445,500	$631,203,300	$27,992,500	$659,195,800	$691,704,000	$32,508,200
DENTAL	27,197,900	1,029,600	28,227,500	4,186,600	0	4,186,600	31,384,500	1,029,600	32,414,100	32,939,000	524,900
MENTAL HEALTH	16,111,700	98,500	16,210,200	4,320,800	100,000	4,420,800	20,432,500	198,500	20,631,000	21,244,000	613,000
ALCOHOLISM	2,479,400	722,800	3,202,200	28,619,400	128,900	28,748,300	31,098,800	851,700	31,950,500	33,044,000	1,093,500
MAINTENANCE & REPAIR	0	11,467,300	11,467,300	0	557,600	557,600	0	12,024,900	12,024,900	12,025,000	100
REIMBURSEMENTS	0	3,492,000	3,492,000	0	700,300	700,300	0	4,192,300	4,192,300	47,100,000	42,907,700
TOTAL HEALTH DELIVERY	$485,006,900	$36,342,600	$521,349,500	$229,112,200	$9,946,900	$239,059,100	$714,119,100	$46,289,500	$760,408,600	$838,056,000	$77,647,400
CONTRACT CARE	164,490,700	5,318,800	169,809,500	47,944,900	0	47,944,900	212,435,600	5,318,800	217,754,400	220,860,000	3,105,600
TOTAL CLINICAL SERVICES	$649,497,600	$41,661,400	$691,159,000	$277,057,100	$9,946,900	$287,004,000	$926,554,700	$51,608,300	$978,163,000	$1,058,916,000	$80,753,000
PREVENTIVE HEALTH:											
SANITATION	$22,886,700	$959,200	$23,845,900	$1,512,100	$0	$1,512,100	$24,398,800	$959,200	$25,358,000	$25,571,000	$213,000
PUBLIC HEALTH NURSING	11,672,100	16,000	11,688,100	2,861,200	0	2,861,200	14,533,300	16,000	14,549,300	15,025,000	475,700
HEALTH EDUCATION	2,431,800	216,600	2,648,400	2,036,200	49,000	2,085,200	4,468,000	265,600	4,733,600	4,822,000	88,400
COMMUNITY HEALTH REPS	604,000	185,400	789,400	29,088,200	642,100	29,730,300	29,692,200	827,500	30,519,700	31,085,000	565,300
IMMUNIZATION	1,127,000	0	1,127,000	0	0	0	1,127,000	0	1,127,000	1,127,000	0
TOTAL PREVENTIVE HEALTH	$38,721,600	$1,377,200	$40,098,800	$35,497,700	$691,100	$36,188,800	$74,219,300	$2,068,300	$76,287,600	$77,630,000	$1,342,400
URBAN PROJECTS	0	316,500	316,500	0	12,648,000	12,648,000	0	12,964,500	12,964,500	13,049,000	84,500
INDIAN HLTH MANPOWER	0	9,340,000	9,340,000	0	0	0	0	9,340,000	9,340,000	9,540,000	200,000
TRIBAL MANAGEMENT	0	0	0	0	2,562,000	2,562,000	0	2,562,000	2,562,000	2,562,000	0
DIRECT OPERATIONS	43,933,900	0	43,933,900	0	0	0	43,933,900	0	43,933,900	44,484,000	550,100
TOTAL IHS	$732,153,100	$52,695,100	$784,848,200	$312,554,800	$25,848,000	$338,402,800	$1,044,707,900	$78,543,100	$1,123,251,000	$1,206,181,000	$82,930,000
								W/O REIMBURSEMENTS	1,119,058,700	1,159,081,000	40,022,300

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

ABERDEEN 45
17-May-90

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION RECURRING	NON-RECURRING	TOTAL	TRIBAL HEALTH ADMINISTRATION RECURRING	NON-RECURRING	TOTAL	TOTAL AREA FY 1990 ALLOCATION RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$45,024,900	$1,554,500	$46,579,400	$9,443,500	$602,000	$10,045,500	$54,468,400	$2,156,500	$56,624,900
DENTAL	3,161,500	1,000	3,162,500	227,600	0	227,600	3,389,100	1,000	3,390,100
MENTAL HEALTH	3,665,300	8,800	3,674,100	197,600	0	197,600	3,862,900	8,800	3,871,700
ALCOHOLISM	79,100	35,000	114,100	3,259,800	0	3,259,800	3,338,900	35,000	3,373,900
MAINTENANCE & REPAIR	0	1,098,000	1,098,000	0	0	0	0	1,098,000	1,098,000
REIMBURSEMENTS	0	25,300	25,300	0	36,100	36,100	0	61,400	61,400
TOTAL HEALTH DELIVERY	$51,930,800	$2,722,600	$54,653,400	$13,128,500	$638,100	$13,766,600	$65,059,300	$3,360,700	$68,420,000
CONTRACT CARE	23,821,000	429,600	24,250,600	2,685,900	0	2,685,900	26,506,900	429,600	26,936,500
TOTAL CLINICAL SERVICES	$75,751,800	$3,152,200	$78,904,000	$15,814,400	$638,100	$16,452,500	$91,566,200	$3,790,300	$95,356,500
PREVENTIVE HEALTH:									
SANITATION	$2,046,900	$15,000	$2,061,900	$105,700	$0	$105,700	$2,152,600	$15,000	$2,167,600
PUBLIC HEALTH NURSING	1,712,100	2,000	1,714,100	227,500	0	227,500	1,939,600	2,000	1,941,600
HEALTH EDUCATION	244,400	0	244,400	227,100	0	227,100	471,500	0	471,500
COMMUNITY HEALTH REPS	122,200	83,000	205,200	3,536,000	11,600	3,547,600	3,658,200	94,600	3,752,800
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$4,125,600	$100,000	$4,225,600	$4,096,300	$11,600	$4,107,900	$8,221,900	$111,600	$8,333,500
URBAN PROJECTS	0	0	0	0	382,000	382,000	0	382,000	382,000
INDIAN HLTH MANPOWER	0	150,000	150,000	0	0	0	0	150,000	150,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	2,036,200	0	2,036,200	0	0	0	2,036,200	0	2,036,200
TOTAL ALLOWANCES ISSUED	$81,913,600	$3,402,200	$85,315,800	$19,910,700	$1,031,700	$20,942,400	$101,824,300	$4,433,900	$106,258,200

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

ALASKA 59

17-May-90	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$48,138,100	$2,589,400	$50,727,500	$65,908,500	$675,000	$66,583,500	$114,046,600	$3,264,400	$117,311,000
DENTAL	1,816,200	164,600	1,980,800	1,974,400	0	1,974,400	3,790,600	164,600	3,955,200
MENTAL HEALTH	1,156,600	8,000	1,164,600	418,800	0	418,800	1,575,400	8,000	1,583,400
ALCOHOLISM	706,700	237,300	944,000	1,778,700	0	1,778,700	2,485,400	237,300	2,722,700
MAINTENANCE & REPAIR	0	2,873,800	2,873,800	0	454,200	454,200	0	3,328,000	3,328,000
REIMBURSEMENTS	0	262,275	262,275	0	117,100	117,100	0	379,375	379,375
TOTAL HEALTH DELIVERY	$51,817,600	$6,135,375	$57,952,975	$70,080,400	$1,246,300	$71,326,700	$121,898,000	$7,381,675	$129,279,675
CONTRACT CARE	8,416,400	271,000	8,687,400	17,296,200	0	17,296,200	25,712,600	271,000	25,983,600
TOTAL CLINICAL SERVICES	$60,234,000	$6,406,375	$66,640,375	$87,376,600	$1,246,300	$88,622,900	$147,610,600	$7,652,675	$155,263,275
PREVENTIVE HEALTH:									
SANITATION	$3,761,500	$130,000	$3,891,500	$403,200	$0	$403,200	$4,164,700	$130,000	$4,294,700
PUBLIC HEALTH NURSING	115,200	0	115,200	267,000	0	267,000	382,200	0	382,200
HEALTH EDUCATION	155,000	0	155,000	353,800	0	353,800	508,800	0	508,800
COMMUNITY HEALTH REPS	10,000	0	10,000	2,005,500	112,600	2,118,100	2,015,500	112,600	2,128,100
IMMUNIZATION	1,127,000	0	1,127,000	0	0	0	1,127,000	0	1,127,000
TOTAL PREVENTIVE HEALTH	$5,168,700	$130,000	$5,298,700	$3,029,500	$112,600	$3,142,100	$8,198,200	$242,600	$8,440,800
URBAN PROJECTS	0	0	0	0	0	0	0	0	0
INDIAN HLTH MANPOWER	0	80,000	80,000	0	0	0	0	80,000	80,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	2,699,300	0	2,699,300	0	0	0	2,699,300	0	2,699,300
TOTAL ALLOWANCES ISSUED	$68,102,000	$6,616,375	$74,718,375	$90,406,100	$1,358,900	$91,765,000	$158,508,100	$7,975,275	$166,483,375

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

ALBUQUERQUE 53
17-May-90

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$33,714,700	$740,200	$34,454,900	$4,441,100	$655,000	$5,096,100	$38,155,800	$1,395,200	$39,551,000
DENTAL	2,832,700	62,000	2,894,700	48,200	0	48,200	2,880,900	62,000	2,942,900
MENTAL HEALTH	1,319,000	5,100	1,324,100	128,800	0	128,800	1,447,800	5,100	1,452,900
ALCOHOLISM	303,000	54,100	357,100	2,154,800	0	2,154,800	2,457,800	54,100	2,511,900
MAINTENANCE & REPAIR	0	779,000	779,000	0	0	0	0	779,000	779,000
REIMBURSEMENTS	0	12,325	12,325	0	29,900	29,900	0	42,225	42,225
TOTAL HEALTH DELIVERY	$38,169,400	$1,652,725	$39,822,125	$6,772,900	$684,900	$7,457,800	$44,942,300	$2,337,625	$47,279,925
CONTRACT CARE	13,030,300	260,100	13,290,400	342,100	0	342,100	13,372,400	260,100	13,632,500
TOTAL CLINICAL SERVICES	$51,199,700	$1,912,825	$53,112,525	$7,115,000	$684,900	$7,799,900	$58,314,700	$2,597,725	$60,912,425
PREVENTIVE HEALTH:									
SANITATION	$1,489,300	$129,000	$1,618,300	$0	$0	$0	$1,489,300	$129,000	$1,618,300
PUBLIC HEALTH NURSING	1,246,600	0	1,246,600	33,700	0	33,700	1,280,300	0	1,280,300
HEALTH EDUCATION	482,800	0	482,800	22,700	35,000	57,700	505,500	35,000	540,500
COMMUNITY HEALTH REPS	39,800	0	39,800	1,799,000	60,500	1,859,500	1,838,800	103,700	1,942,500
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$3,258,500	$129,000	$3,387,500	$1,855,400	$95,500	$1,950,900	$5,113,900	$267,700	$5,381,600
URBAN PROJECTS	0	0	0	0	360,000	360,000	0	360,000	360,000
INDIAN HLTH MANPOWER	0	75,000	75,000	0	0	0	0	75,000	75,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	1,061,600	0	1,061,600	0	0	0	1,061,600	0	1,061,600
TOTAL ALLOWANCES ISSUED	$55,519,800	$2,116,825	$57,636,625	$8,970,400	$1,140,400	$10,110,800	$64,490,200	$3,300,425	$67,790,625

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

BUQUERQUE HQ 65
17-May-90

CTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
LINICAL SERVICES:									
HOSPITALS & CLINICS	$5,022,900	$685,000	$5,707,900	$0	$0	$0	$5,022,900	$685,000	$5,707,900
DENTAL	8,000	245,000	253,000	0	0	0	8,000	245,000	253,000
MENTAL HEALTH	812,400	(76,400)	736,000	0	0	0	812,400	(76,400)	736,000
ALCOHOLISM	0	43,000	43,000	0	0	0	0	43,000	43,000
MAINTENANCE & REPAIR	0	0	0	0	0	0	0	0	0
REIMBURSEMENTS	0	310,100	310,100	0	0	0	0	310,100	310,100
OTAL HEALTH DELIVERY	$5,843,300	$1,206,700	$7,050,000	$0	$0	$0	$5,843,300	$1,206,700	$7,050,000
CONTRACT CARE	0	0	0	0	0	0	0	0	0
OTAL CLINICAL SERVICES	$5,843,300	$1,206,700	$7,050,000	$0	$0	$0	$5,843,300	$1,206,700	$7,050,000
REVENTIVE HEALTH:									
SANITATION	$0	$120,000	$120,000	$0	$0	$0	$0	$120,000	$120,000
PUBLIC HEALTH NURSING	0	0	0	0	0	0	0	0	0
HEALTH EDUCATION	0	0	0	0	0	0	0	0	0
COMMUNITY HEALTH REPS	0	0	0	0	0	0	0	0	0
IMMUNIZATION	0	0	0	0	0	0	0	0	0
OTAL PREVENTIVE HEALTH	$0	$120,000	$120,000	$0	$0	$0	$0	$120,000	$120,000
RBAN PROJECTS	0	0	0	0	0	0	0	0	0
NDIAN HLTH MANPOWER	0	0	0	0	0	0	0	0	0
RIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
IRECT OPERATIONS	2,317,100	0	2,317,100	0	0	0	2,317,100	0	2,317,100
OTAL ALLOWANCES ISSUED	$8,160,400	$1,326,700	$9,487,100	$0	$0	$0	$8,160,400	$1,326,700	$9,487,100

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

BEMIDJI 46
17-May-90

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$9,928,600	$589,200	$10,517,800	$19,311,700	$617,000	$19,928,700	$29,240,300	$1,206,200	$30,446,500
DENTAL	667,200	66,000	733,200	415,800	0	415,800	1,083,000	66,000	1,149,000
MENTAL HEALTH	428,500	10,800	439,300	333,800	0	333,800	762,300	10,800	773,100
ALCOHOLISM	148,600	15,000	163,600	2,122,700	20,000	2,142,700	2,271,300	35,000	2,306,300
MAINTENANCE & REPAIR	0	407,400	407,400	0	13,600	13,600	0	421,000	421,000
REIMBURSEMENTS	0	38,100	38,100	0	89,700	89,700	0	127,800	127,800
TOTAL HEALTH DELIVERY	$11,172,900	$1,126,500	$12,299,400	$22,184,000	$740,300	$22,924,300	$33,356,900	$1,866,800	$35,223,700
CONTRACT CARE	3,649,600	46,700	3,696,300	8,588,800	0	8,588,800	12,238,400	46,700	12,285,100
TOTAL CLINICAL SERVICES	$14,822,500	$1,173,200	$15,995,700	$30,772,800	$740,300	$31,513,100	$45,595,300	$1,913,500	$47,508,800
PREVENTIVE HEALTH:									
SANITATION	$1,586,700	$33,000	$1,619,700	$120,700	$0	$120,700	$1,707,400	$33,000	$1,740,400
PUBLIC HEALTH NURSING	15,700	2,000	17,700	421,500	0	421,500	437,200	2,000	439,200
HEALTH EDUCATION	10,800	57,500	68,300	93,700	0	93,700	104,500	57,500	162,000
COMMUNITY HEALTH REPS	1,000	0	1,000	2,083,800	25,700	2,109,500	2,084,800	25,700	2,110,500
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$1,614,200	$92,500	$1,706,700	$2,719,700	$25,700	$2,745,400	$4,333,900	$118,200	$4,452,100
URBAN PROJECTS	0	0	0	0	1,740,000	1,740,000	0	1,740,000	1,740,000
INDIAN HLTH MANPOWER	0	0	0	0	0	0	0	0	0
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	1,113,700	0	1,113,700	0	0	0	1,113,700	0	1,113,700
TOTAL ALLOWANCES ISSUED	$17,550,400	$1,265,700	$18,816,100	$33,492,500	$2,506,000	$35,998,500	$51,042,900	$3,771,700	$54,814,600

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

BILLINGS 47
17-May-90

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$27,306,100	$663,200	$27,969,300	$2,657,300	$705,200	$3,362,500	$29,963,400	$1,368,400	$31,331,800
DENTAL	2,205,000	48,000	2,253,000	6,600	0	6,600	2,211,600	48,000	2,259,600
MENTAL HEALTH	1,442,300	8,500	1,450,800	82,400	0	82,400	1,524,700	8,500	1,533,200
ALCOHOLISM	643,900	20,000	663,900	1,634,800	40,000	1,674,800	2,278,700	60,000	2,338,700
MAINTENANCE & REPAIR	0	592,000	592,000	0	0	0	0	592,000	592,000
REIMBURSEMENTS	0	56,400	56,400	0	69,000	69,000	0	125,400	125,400
TOTAL HEALTH DELIVERY	$31,597,300	$1,388,100	$32,985,400	$4,381,100	$814,200	$5,195,300	$35,978,400	$2,202,300	$38,180,700
CONTRACT CARE	22,735,000	112,700	22,847,700	118,100	0	118,100	22,853,100	112,700	22,965,800
TOTAL CLINICAL SERVICES	$54,332,300	$1,500,800	$55,833,100	$4,499,200	$814,200	$5,313,400	$58,831,500	$2,315,000	$61,146,500
PREVENTIVE HEALTH:									
SANITATION	$1,120,800	$8,000	$1,128,800	$166,300	$0	$166,300	$1,287,100	$8,000	$1,295,100
PUBLIC HEALTH NURSING	885,000	1,000	886,000	235,500	0	235,500	1,120,500	1,000	1,121,500
HEALTH EDUCATION	269,900	0	269,900	182,100	0	182,100	452,000	0	452,000
COMMUNITY HEALTH REPS	347,100	8,700	355,800	2,001,500	29,900	2,031,400	2,348,600	38,600	2,387,200
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$2,622,800	$17,700	$2,640,500	$2,585,400	$29,900	$2,615,300	$5,208,200	$47,600	$5,255,800
URBAN PROJECTS	0	0	0	0	596,000	596,000	0	596,000	596,000
INDIAN HLTH MANPOWER	0	50,000	50,000	0	0	0	0	50,000	50,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	1,660,100	0	1,660,100	0	0	0	1,660,100	0	1,660,100
TOTAL ALLOWANCES ISSUED	$58,615,200	$1,568,500	$60,183,700	$7,084,600	$1,440,100	$8,524,700	$65,693,800	$3,008,600	$68,708,400

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

CALIFORNIA 41
17-May-90

	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$4,585,900	$524,800	$5,110,700	$29,185,100	$809,000	$29,994,100	$33,771,000	$1,333,800	$35,104,800
DENTAL	16,900	4,000	20,900	367,200	0	367,200	384,100	4,000	388,100
MENTAL HEALTH	112,600	10,500	123,100	542,100	0	542,100	654,700	10,500	665,200
ALCOHOLISM	0	35,000	35,000	3,471,100	0	3,471,100	3,471,100	35,000	3,506,100
MAINTENANCE & REPAIR	0	213,000	213,000	0	0	0	0	213,000	213,000
REIMBURSEMENTS	0	9,875	9,875	0	108,900	108,900	0	118,775	118,775
TOTAL HEALTH DELIVERY	$4,715,400	$797,175	$5,512,575	$33,565,500	$917,900	$34,483,400	$38,280,900	$1,715,075	$39,995,975
CONTRACT CARE	5,200	63,200	68,400	2,259,900	0	2,259,900	2,265,100	63,200	2,328,300
TOTAL CLINICAL SERVICES	$4,720,600	$860,375	$5,580,975	$35,825,400	$917,900	$36,743,300	$40,546,000	$1,778,275	$42,324,275
PREVENTIVE HEALTH:									
SANITATION	$1,056,400	$116,200	$1,172,600	$30,600	$0	$30,600	$1,087,000	$116,200	$1,203,200
PUBLIC HEALTH NURSING	0	0	0	150,100	0	150,100	150,100	0	150,100
HEALTH EDUCATION	76,500	0	76,500	18,600	0	18,600	95,100	0	95,100
COMMUNITY HEALTH REPS	9,200	0	9,200	983,500	98,000	1,081,500	992,700	98,000	1,090,700
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$1,142,100	$116,200	$1,258,300	$1,182,800	$98,000	$1,280,800	$2,324,900	$214,200	$2,539,100
URBAN PROJECTS	0	0	0	0	2,730,000	2,730,000	0	2,730,000	2,730,000
INDIAN HLTH MANPOWER	0	0	0	0	0	0	0	0	0
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	1,012,500	0	1,012,500	0	0	0	1,012,500	0	1,012,500
TOTAL ALLOWANCES ISSUED	$6,875,200	$976,575	$7,851,775	$37,008,200	$3,745,900	$40,754,100	$43,883,400	$4,722,475	$48,605,875

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

NASHVILLE 51
17-May-90

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$10,401,900	$285,800	$10,687,700	$17,174,700	$452,000	$17,626,700	$27,576,600	$737,800	$28,314,400
DENTAL	673,300	17,000	690,300	80,600	0	80,600	753,900	17,000	770,900
MENTAL HEALTH	103,000	11,800	114,800	441,300	0	441,300	544,300	11,800	556,100
ALCOHOLISM	170,700	90,800	261,500	1,426,000	0	1,426,000	1,596,700	90,800	1,687,500
MAINTENANCE & REPAIR	0	336,000	336,000	0	21,000	21,000	0	357,000	357,000
REIMBURSEMENTS	0	13,975	13,975	0	49,200	49,200	0	63,175	63,175
TOTAL HEALTH DELIVERY	$11,348,900	$755,375	$12,104,275	$19,122,600	$522,200	$19,644,800	$30,471,500	$1,277,575	$31,749,075
CONTRACT CARE	2,050,800	41,700	2,092,500	7,812,400	0	7,812,400	9,863,200	41,700	9,904,900
TOTAL CLINICAL SERVICES	$13,399,700	$797,075	$14,196,775	$26,935,000	$522,200	$27,457,200	$40,334,700	$1,319,275	$41,653,975
PREVENTIVE HEALTH:									
SANITATION	$756,600	$13,000	$769,600	$58,400	$0	$58,400	$815,000	$13,000	$828,000
PUBLIC HEALTH NURSING	155,100	0	155,100	150,000	0	150,000	305,100	0	305,100
HEALTH EDUCATION	90,700	0	90,700	13,600	14,000	27,600	104,300	14,000	118,300
COMMUNITY HEALTH REPS	0	0	0	1,670,400	13,300	1,683,700	1,670,400	13,300	1,683,700
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$1,002,400	$13,000	$1,015,400	$1,892,400	$27,300	1,919,700	$2,894,800	$40,300	$2,935,100
URBAN PROJECTS	0	0	0	0	316,000	316,000	0	316,000	316,000
INDIAN HLTH MANPOWER	0	0	0	0	0	0	0	0	0
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	1,324,700	0	1,324,700	0	0	0	1,324,700	0	1,324,700
TOTAL ALLOWANCES ISSUED	$15,726,800	$810,075	$16,536,875	$28,827,400	$865,500	$29,692,900	$44,554,200	$1,675,575	$46,229,775

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

NAVAJO 54

17-May-90	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$78,904,700	$1,787,300	$80,692,000	$5,453,700	$1,161,200	$6,614,900	$84,358,400	$2,948,500	$87,306,900
DENTAL	5,716,000	116,000	5,832,000	0	0	0	5,716,000	116,000	5,832,000
MENTAL HEALTH	2,487,400	6,900	2,494,300	0	0	0	2,487,400	6,900	2,494,300
ALCOHOLISM	0	20,000	20,000	2,705,500	0	2,705,500	2,705,500	20,000	2,725,500
MAINTENANCE & REPAIR	0	1,843,000	1,843,000	0	0	0	0	1,843,000	1,843,000
REIMBURSEMENTS	0	216,975	216,975	0	21,700	21,700	0	238,675	238,675
TOTAL HEALTH DELIVERY	$87,108,100	$3,990,175	$91,098,275	$8,159,200	$1,182,900	$9,342,100	$95,267,300	$5,173,075	$100,440,375
CONTRACT CARE	24,393,200	516,500	24,909,700	331,900	0	331,900	24,725,100	516,500	25,241,600
TOTAL CLINICAL SERVICES	$111,501,300	$4,506,675	$116,007,975	$8,491,100	$1,182,900	$9,674,000	$119,992,400	$5,689,575	$125,681,975
PREVENTIVE HEALTH:									
SANITATION	$4,232,200	$99,000	$4,331,200	$0	$0	$0	$4,232,200	$99,000	$4,331,200
PUBLIC HEALTH NURSING	3,120,900	0	3,120,900	403,300	0	403,300	3,524,200	0	3,524,200
HEALTH EDUCATION	0	0	0	716,400	0	716,400	716,400	0	716,400
COMMUNITY HEALTH REPS	0	7,000	7,000	3,536,800	96,100	3,632,900	3,536,800	103,100	3,639,900
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$7,353,100	$106,000	$7,459,100	$4,656,500	$96,100	$4,752,600	$12,009,600	$202,100	$12,211,700
URBAN PROJECTS	0	0	0	0	197,500	197,500	0	197,500	197,500
INDIAN HLTH MANPOWER	0	80,000	80,000	0	0	0	0	80,000	80,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	2,272,500	0	2,272,500	0	0	0	2,272,500	0	2,272,500
TOTAL ALLOWANCES ISSUED	$121,126,900	$4,692,675	$125,819,575	$13,147,600	$1,476,500	$14,624,100	$134,274,500	$6,169,175	$140,443,675

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

OKLAHOMA 50
17-May-90

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$57,970,000	$2,137,900	$60,107,900	$20,423,200	$819,000	$21,242,200	$78,393,200	$2,956,900	$81,350,100
DENTAL	4,708,600	133,000	4,841,600	1,005,700	0	1,005,700	5,714,300	133,000	5,847,300
MENTAL HEALTH	1,710,900	6,500	1,717,400	1,233,700	0	1,233,700	2,944,600	6,500	2,951,100
ALCOHOLISM	59,900	35,000	94,900	2,639,900	68,900	2,708,800	2,699,800	103,900	2,803,700
MAINTENANCE & REPAIR	0	1,291,100	1,291,100	0	68,800	68,800	0	1,359,900	1,359,900
REIMBURSEMENTS	0	19,425	19,425	0	0	0	0	19,425	19,425
TOTAL HEALTH DELIVERY	$64,449,400	$3,622,925	$68,072,325	$25,302,500	$956,700	$26,259,200	$89,751,900	$4,579,625	$94,331,525
CONTRACT CARE	19,039,500	257,300	19,296,800	5,015,000	0	5,015,000	24,054,500	257,300	24,311,800
TOTAL CLINICAL SERVICES	$83,488,900	$3,880,225	$87,369,125	$30,317,500	$956,700	$31,274,200	$113,806,400	$4,836,925	$118,643,325
PREVENTIVE HEALTH:									
SANITATION	$2,320,800	$40,000	$2,360,800	$499,400	$0	$499,400	$2,820,200	$40,000	$2,860,200
PUBLIC HEALTH NURSING	1,081,700	0	1,081,700	717,500	0	717,500	1,799,200	0	1,799,200
HEALTH EDUCATION	276,900	40,800	317,700	161,100	0	161,100	438,000	40,800	478,800
COMMUNITY HEALTH REPS	47,700	0	47,700	4,512,900	57,000	4,569,900	4,560,600	57,000	4,617,600
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$3,727,100	$80,800	$3,807,900	$5,890,900	$57,000	$5,947,900	$9,618,000	$137,800	$9,755,800
URBAN PROJECTS	0	0	0	0	850,000	850,000	0	850,000	850,000
INDIAN HLTH MANPOWER	0	50,000	50,000	0	0	0	0	50,000	50,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	2,530,000	0	2,530,000	0	0	0	2,530,000	0	2,530,000
TOTAL ALLOWANCES ISSUED	$89,746,000	$4,011,025	$93,757,025	$36,208,400	$1,863,700	$38,072,100	$125,954,400	$5,874,725	$131,829,125

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

PHOENIX 40
17-May-90

	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$62,856,200	$1,833,900	$64,690,100	$6,591,800	$690,700	$7,282,500	$69,448,000	$2,524,600	$71,972,600
DENTAL	3,065,800	83,000	3,148,800	41,700	0	41,700	3,107,500	83,000	3,190,500
MENTAL HEALTH	1,420,500	11,200	1,431,700	477,500	100,000	577,500	1,898,000	111,200	2,009,200
ALCOHOLISM	307,200	97,400	404,600	2,209,300	0	2,209,300	2,516,500	97,400	2,613,900
MAINTENANCE & REPAIR	0	1,526,000	1,526,000	0	0	0	0	1,526,000	1,526,000
REIMBURSEMENTS	0	2,283,375	2,283,375	0	100,500	100,500	0	2,383,875	2,383,875
TOTAL HEALTH DELIVERY	$67,649,700	$5,834,875	$73,484,575	$9,320,300	$891,200	$10,211,500	$76,970,000	$6,726,075	$83,696,075
CONTRACT CARE	20,565,700	269,300	20,835,000	19,900	0	19,900	20,585,600	269,300	20,854,900
TOTAL CLINICAL SERVICES	$88,215,400	$6,104,175	$94,319,575	$9,340,200	$891,200	$10,231,400	$97,555,600	$6,995,375	$104,550,975
PREVENTIVE HEALTH:									
SANITATION	$2,547,300	$87,000	$2,634,300	$35,100	$0	$35,100	$2,582,400	$87,000	$2,669,400
PUBLIC HEALTH NURSING	2,249,600	0	2,249,600	149,700	0	149,700	2,399,300	0	2,399,300
HEALTH EDUCATION	537,800	50,000	587,800	182,700	0	182,700	720,500	50,000	770,500
COMMUNITY HEALTH REPS	27,000	0	27,000	3,217,200	49,500	3,266,700	3,244,200	49,500	3,293,700
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$5,361,700	$137,000	$5,498,700	$3,584,700	$49,500	$3,634,200	$8,946,400	$186,500	$9,132,900
URBAN PROJECTS	0	0	0	0	855,700	855,700	0	855,700	855,700
INDIAN HLTH MANPOWER	0	30,000	30,000	0	0	0	0	30,000	30,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	2,230,900	0	2,230,900	0	0	0	2,230,900	0	2,230,900
TOTAL ALLOWANCES ISSUED	$95,808,000	$6,271,175	$102,079,175	$12,924,900	$1,796,400	$14,721,300	$108,732,900	$8,067,575	$116,800,475

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

PORTLAND 64
17-May-90

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$16,428,700	$736,300	$17,165,000	$10,417,100	$933,000	$11,350,100	$26,845,800	$1,669,300	$28,515,100
DENTAL	1,891,000	75,000	1,966,000	18,800	0	18,800	1,909,800	75,000	1,984,800
MENTAL HEALTH	1,043,400	8,800	1,052,200	459,800	0	459,800	1,503,200	8,800	1,512,000
ALCOHOLISM	10,400	35,200	45,600	4,736,400	0	4,736,400	4,746,800	35,200	4,782,000
MAINTENANCE & REPAIR	0	296,000	296,000	0	0	0	0	296,000	296,000
REIMBURSEMENTS	0	192,075	192,075	0	56,200	56,200	0	248,275	248,275
TOTAL HEALTH DELIVERY	$19,373,500	$1,343,375	$20,716,875	$15,632,100	$989,200	$16,621,300	$35,005,600	$2,332,575	$37,338,175
CONTRACT CARE	21,111,200	84,900	21,196,100	3,474,700	0	3,474,700	24,585,900	84,900	24,670,800
TOTAL CLINICAL SERVICES	$40,484,700	$1,428,275	$41,912,975	$19,106,800	$989,200	$20,096,000	$59,591,500	$2,417,475	$62,008,975
PREVENTIVE HEALTH:									
SANITATION	$1,402,800	$61,000	$1,463,800	$92,700	$0	$92,700	$1,495,500	$61,000	$1,556,500
PUBLIC HEALTH NURSING	758,200	0	$758,200	105,400	0	105,400	863,600	0	863,600
HEALTH EDUCATION	287,000	60,000	$347,000	64,400	0	64,400	351,400	60,000	411,400
COMMUNITY HEALTH REPS	0	0	$0	2,581,600	45,000	2,626,600	2,581,600	45,000	2,626,600
IMMUNIZATION	0	0	$0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$2,448,000	$121,000	$2,569,000	$2,844,100	$45,000	$2,889,100	$5,292,100	$166,000	$5,458,100
URBAN PROJECTS	0	44,500	44,500	0	1,937,000	1,937,000	0	1,981,500	1,981,500
INDIAN HLTH MANPOWER	0	30,000	30,000	0	0	0	0	30,000	30,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	1,838,900	0	1,838,900	0	0	0	1,838,900	0	1,838,900
TOTAL ALLOWANCES ISSUED	$44,771,600	$1,623,775	$46,395,375	$21,950,900	$2,971,200	$24,922,100	$66,722,500	$4,594,975	$71,317,475

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

TUCSON 42
17-May-90

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$9,571,200	$506,800	$10,078,000	$977,700	$341,000	$1,318,700	$10,548,900	$847,800	$11,396,700
DENTAL	435,700	12,000	447,700	0	0	0	435,700	12,000	447,700
MENTAL HEALTH	386,400	3,000	389,400	5,000	0	5,000	391,400	3,000	394,400
ALCOHOLISM	49,900	5,000	54,900	480,400	0	480,400	530,300	5,000	535,300
MAINTENANCE & REPAIR	0	212,000	212,000	0	0	0	0	212,000	212,000
REIMBURSEMENTS	0	229,575	229,575	0	22,000	22,000	0	251,575	251,575
TOTAL HEALTH DELIVERY	$10,443,200	$968,375	$11,411,575	$1,463,100	$363,000	$1,826,100	$11,906,300	$1,331,375	$13,237,675
CONTRACT CARE	5,672,800	115,800	5,788,600	0	0	0	5,672,800	115,800	5,788,600
TOTAL CLINICAL SERVICES	$16,116,000	$1,084,175	$17,200,175	$1,463,100	$363,000	$1,826,100	$17.579,100	$1,447,175	$19,026,275
PREVENTIVE HEALTH:									
SANITATION	$565,400	$56,000	$621,400	$0	$0	$0	$565,400	$56,000	$621,400
PUBLIC HEALTH NURSING	332,000	1,000	333,000	0	0	0	332,000	1,000	333,000
HEALTH EDUCATION	0	0	0	0	0	0	0	0	0
COMMUNITY HEALTH REPS	0	0	0	1,160,000	42,900	1,202,900	1,160,000	42,900	1,202,900
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$897,400	$57,000	$954,400	$1,160,000	$42,900	$1,202,900	$2,057,400	$99,900	$2,157,300
URBAN PROJECTS	0	0	0	0	215,000	215,000	0	215,000	215,000
INDIAN HLTH MANPOWER	0	0	0	0	0	0	0	0	0
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	1,023,600	0	1,023,600	0	0	0	1,023,600	0	1,023,600
TOTAL ALLOWANCES ISSUED	$18,037,000	$1,141,175	$19,178,175	$2,623,100	$620,900	$3,244,000	$20,660,100	$1,762,075	$22,422,175

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1990

HEADQUARTERS 94
17-May-90

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1990 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$25,698,400	$4,898,100	$30,596,500	$0	$0	$0	$25,638,400	$4,898,100	$30,596,500
DENTAL	0	3,000	3,000	0	0	0	0	3,000	3,000
MENTAL HEALTH	23,400	75,000	98,400	0	0	0	23,400	75,000	98,400
ALCOHOLISM	0	0	0	0	0	0	0	0	0
MAINTENANCE & REPAIR	0	0	0	0	0	0	0	0	0
REIMBURSEMENTS	0	(177,775)	(177,775)	0	0	0	0	(177,775)	(177,775)
TOTAL HEALTH DELIVERY	$25,721,800	$4,798,325	$30,520,125	$0	$0	$0	$25,721,800	$4,798,325	$30,520,125
CONTRACT CARE	0	2,850,000	2,850,000	0	0	0	0	2,850,000	2,850,000
TOTAL CLINICAL SERVICES	$25,721,800	$7,648,325	$33,370,125	$0	$0	$0	$25,721,800	$7,648,325	$33,370,125
PREVENTIVE HEALTH:									
SANITATION	$0	$52,000	$52,000	$0	$0	$0	$0	$52,000	$52,000
PUBLIC HEALTH NURSING	0	10,000	10,000	0	0	0	0	10,000	10,000
HEALTH EDUCATION	0	8,300	8,300	0	0	0	0	8,300	8,300
COMMUNITY HEALTH REPS	0	86,700	86,700	0	0	0	0	86,700	86,700
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$0	$157,000	$157,000	$0	$0	$0	$0	$157,000	$157,000
URBAN PROJECTS	0	272,000	272,000	0	2,468,800	2,468,800	0	2,740,800	2,740,800
INDIAN HLTH MANPOWER	0	8,795,000	8,795,000	0	0	0	0	8,795,000	8,795,000
TRIBAL MANAGEMENT	0	0	0	0	2,562,000	2,562,000	0	2,562,000	2,562,000
DIRECT OPERATIONS	20,812,800	0	20,812,800	0	0	0	20,812,800	0	20,812,800
TOTAL ALLOWANCES ISSUED	$46,534,600	$16,872,325	$63,406,325	$0	$5,030,800	$5,030,800	$46,534,600	$21,903,125	$68,437,725

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

ALL AREAS	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION			FY 1989	REPROGRAMMING ADJUSTED FY 89
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	APPROPRIATION	APPROPRIATION
ACTIVITY/SUB-ACTIVITY											
CLINICAL SERVICES:											
HOSPITALS & CLINICS	$387,782,400	$31,726,930	$419,509,330	$151,803,900	$5,125,770	$156,929,670	$539,586,300	$36,852,700	$576,439,000	$578,643,000	$576,439,000
DENTAL	24,188,900	3,203,300	27,392,200	4,030,100	62,700	4,092,800	28,219,000	3,266,000	31,485,000	31,485,000	31,485,000
MENTAL HEALTH	9,502,800	546,200	10,049,000	2,879,700	162,300	3,042,000	12,382,500	708,500	13,091,000	13,091,000	13,091,000
ALCOHOLISM	1,914,600	1,279,500	3,194,100	27,274,900	215,000	27,489,900	29,189,500	1,494,500	30,684,000	31,159,000	30,684,000
MAINTENANCE & REPAIR	0	10,990,700	10,990,700	0	765,300	765,300	0	11,756,000	11,756,000	11,756,000	11,756,000
REIMBURSEMENTS	0	6,463,020	6,463,020	0	97,200	97,200	0	6,561,020	6,561,020	7,100,000	7,100,000
TOTAL HEALTH DELIVERY	$423,388,700	$54,210,450	$477,599,150	$185,988,600	$6,428,270	$192,416,870	$609,377,300	$60,638,720	$670,016,020	$673,234,000	$670,555,000
CONTRACT CARE	147,686,200	10,120,000	157,806,200	43,118,800	1,529,000	44,647,800	190,805,000	11,649,000	202,454,000	199,454,000	202,454,000
TOTAL CLINICAL SERVICES	$571,074,900	$64,330,450	$635,405,350	$229,107,400	$7,957,270	$237,064,670	$800,182,300	$72,287,720	$872,470,020	$872,688,000	$873,009,000
PREVENTIVE HEALTH:											
SANITATION	$21,585,100	$1,481,600	$23,066,700	$1,569,900	$17,400	$1,587,300	$23,155,000	$1,499,000	$24,654,000	$24,654,000	$24,654,000
PUBLIC HEALTH NURSING	11,029,900	680,000	11,709,900	2,726,100	31,000	2,757,100	13,756,000	711,000	14,467,000	14,467,000	14,467,000
HEALTH EDUCATION	2,302,100	236,100	2,538,200	1,918,900	93,900	2,012,800	4,221,000	330,000	4,551,000	4,651,000	4,551,000
COMMUNITY HEALTH REPS	567,500	196,200	763,700	27,439,500	857,800	28,297,300	28,007,000	1,054,000	29,061,000	29,282,000	29,061,000
IMMUNIZATION	417,000	0	417,000	0	0	0	417,000	0	417,000	417,000	417,000
TOTAL PREVENTIVE HEALTH	$35,901,600	$2,593,900	$38,495,500	$33,654,400	$1,000,100	$34,654,500	$69,556,000	$3,594,000	$73,150,000	$73,471,000	$73,150,000
URBAN PROJECTS	0	555,500	555,500	0	9,406,500	9,406,500	0	9,962,000	9,962,000	9,962,000	9,962,000
INDIAN HLTH MANPOWER	0	7,896,000	7,896,000	0	0	0	0	7,896,000	7,896,000	7,896,000	7,896,000
TRIBAL MANAGEMENT	844,800	278,500	1,123,300	4,700	2,090,000	2,094,700	849,500	2,368,500	3,218,000	3,218,000	3,218,000
DIRECT OPERATIONS	40,794,000	1,677,000	42,471,000	0	0	0	40,794,000	1,677,000	42,471,000	42,471,000	42,471,000
TOTAL IHS	$640,615,300	$77,331,350	$725,946,650	$262,766,500	$20,453,870	$283,220,370	$911,381,800	$97,785,220	$1,009,167,020	$1,009,706,000	$1,009,706,000

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

ABERDEEN AS	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$36,228,900	$1,847,670	$38,076,570	$7,695,100	$1,012,000	$8,707,100	$43,924,000	$2,859,670	$46,783,670
DENTAL	2,412,500	292,700	2,705,200	230,500	51,000	281,500	2,643,000	343,700	2,986,700
MENTAL HEALTH	1,371,900	27,400	1,399,300	200,100	17,000	217,100	1,572,000	44,400	1,616,400
ALCOHOLISM	75,200	25,000	100,200	3,112,000	29,000	3,141,000	3,187,200	54,000	3,241,200
MAINTENANCE & REPAIR	0	1,165,000	1,165,000	0	0	0	0	1,165,000	1,165,000
REIMBURSEMENTS	0	53,600	53,600	0	37,000	37,000	0	90,600	90,600
TOTAL HEALTH DELIVERY	$40,088,500	$3,411,370	$43,499,870	$11,237,700	$1,146,000	$12,383,700	$51,326,200	$4,557,370	$55,883,570
CONTRACT CARE	21,738,600	656,500	22,395,100	2,450,000	172,900	2,622,900	24,188,600	829,400	25,018,000
TOTAL CLINICAL SERVICES	$61,827,100	$4,067,870	$65,894,970	$13,687,700	$1,318,900	$15,006,600	$75,514,800	$5,386,770	$80,901,570
PREVENTIVE HEALTH:									
SANITATION	$1,883,700	$97,500	$1,981,200	$196,300	$0	$196,300	$2,080,000	$97,500	$2,177,500
PUBLIC HEALTH NURSING	1,605,000	16,800	1,621,800	222,200	0	222,200	1,827,200	16,800	1,844,000
HEALTH EDUCATION	236,800	2,800	239,600	219,900	10,500	230,400	456,700	13,300	470,000
COMMUNITY HEALTH REPS	123,700	(12,800)	110,900	3,307,600	102,100	3,409,700	3,431,300	89,300	3,520,600
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$3,849,200	$104,300	$3,953,500	$3,946,000	$112,600	$4,058,600	$7,795,200	$216,900	$8,012,100
URBAN PROJECTS	0	0	0	0	464,300	464,300	0	464,300	464,300
INDIAN HLTH MANPOWER	0	272,000	272,000	0	0	0	0	272,000	272,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	1,972,400	75,100	2,047,500	0	0	0	1,972,400	75,100	2,047,500
TOTAL ALLOWANCES ISSUED	$67,648,700	$4,519,270	$72,167,970	$17,633,700	$1,895,800	$19,529,500	$85,282,400	$6,415,070	$91,697,470

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

ALASKA 59	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$42,482,900	$3,982,190	$46,465,090	$54,810,400	$844,700	$55,655,100	$97,293,300	$4,826,890	$102,120,190
DENTAL	1,417,600	395,600	1,813,200	1,999,400	0	1,999,400	3,417,000	395,600	3,812,600
MENTAL HEALTH	632,100	130,200	762,300	424,100	100,000	524,100	1,056,200	230,200	1,286,400
ALCOHOLISM	178,000	228,200	406,200	1,697,000	0	1,697,000	1,875,000	228,200	2,103,200
MAINTENANCE & REPAIR	0	2,575,100	2,575,100	0	619,900	619,900	0	3,195,000	3,195,000
REIMBURSEMENTS	0	1,329,900	1,329,900	0	54,200	54,200	0	1,384,100	1,384,100
TOTAL HEALTH DELIVERY	$44,710,600	$8,641,190	$53,351,790	$58,931,700	$1,618,800	$60,550,500	$103,642,300	$10,259,990	$113,902,290
CONTRACT CARE	7,628,000	549,000	8,177,000	15,802,700	200,000	16,002,700	23,430,700	749,000	24,179,700
TOTAL CLINICAL SERVICES	$52,338,600	$9,190,190	$61,528,790	$74,734,400	$1,818,800	$76,553,200	$127,073,000	$11,008,990	$138,081,990
PREVENTIVE HEALTH:									
SANITATION	$3,474,700	$626,000	$4,100,700	$425,300	$17,400	$442,700	$3,900,000	$643,400	$4,543,400
PUBLIC HEALTH NURSING	112,500	37,000	149,500	260,800	1,000	261,800	373,300	38,000	411,300
HEALTH EDUCATION	150,200	10,900	161,100	342,700	0	342,700	492,900	10,900	503,800
COMMUNITY HEALTH REPS	10,100	144,500	154,600	1,924,500	14,300	1,938,800	1,934,600	158,800	2,093,400
IMMUNIZATION	417,000	0	417,000	0	0	0	417,000	0	417,000
TOTAL PREVENTIVE HEALTH	$4,164,500	$818,400	$4,982,900	$2,953,300	$32,700	$2,986,000	$7,117,800	$851,100	$7,968,900
URBAN PROJECTS	0	0	0	0	0	0	0	0	0
INDIAN HLTH MANPOWER	0	154,000	154,000	0	0	0	0	154,000	154,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	2,617,300	43,400	2,660,700	0	0	0	2,617,300	43,400	2,660,700
TOTAL ALLOWANCES ISSUED	$59,120,400	$10,205,990	$69,326,390	$77,687,700	$1,851,500	$79,539,200	$136,808,100	$12,057,490	$148,865,590

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

ALBUQUERQUE 53	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$30,926,300	$1,223,370	$32,149,670	$3,227,400	$600,100	$3,827,500	$34,153,700	$1,823,470	$35,977,170
DENTAL	2,575,200	208,000	2,783,200	48,800	0	48,800	2,624,000	208,000	2,832,000
MENTAL HEALTH	949,300	74,700	1,024,000	130,400	0	130,400	1,079,700	74,700	1,154,400
ALCOHOLISM	281,400	201,700	483,100	2,064,700	0	2,064,700	2,346,100	201,700	2,547,800
MAINTENANCE & REPAIR	0	857,000	857,000	0	0	0	0	857,000	857,000
REIMBURSEMENTS	0	174,500	174,500	0	0	0	0	174,500	174,500
TOTAL HEALTH DELIVERY	$34,732,200	$2,739,270	$37,471,470	$5,471,300	$600,100	$6,071,400	$40,203,500	$3,339,370	$43,542,870
CONTRACT CARE	12,056,200	631,100	12,687,300	316,300	0	316,300	12,372,500	631,100	13,003,600
TOTAL CLINICAL SERVICES	$46,788,400	$3,370,370	$50,158,770	$5,787,600	$600,100	$6,387,700	$52,576,000	$3,970,470	$56,546,470
PREVENTIVE HEALTH:									
SANITATION	$1,540,000	$28,700	$1,568,700	$0	$0	$0	$1,540,000	$28,700	$1,568,700
PUBLIC HEALTH NURSING	1,204,300	172,700	1,377,000	34,100	0	34,100	1,238,400	172,700	1,411,100
HEALTH EDUCATION	446,900	34,500	481,400	22,000	35,000	57,000	468,900	69,500	538,400
COMMUNITY HEALTH REPS	40,300	0	40,300	1,685,300	64,100	1,749,400	1,725,600	64,100	1,789,700
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$3,231,500	$235,900	$3,467,400	$1,741,400	$99,100	$1,840,500	$4,972,900	$335,000	$5,307,900
URBAN PROJECTS	0	0	0	0	358,300	358,300	0	358,300	358,300
INDIAN HLTH MANPOWER	0	63,000	63,000	0	0	0	0	63,000	63,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	1,007,800	16,700	1,024,500	0	0	0	1,007,800	16,700	1,024,500
TOTAL ALLOWANCES ISSUED	$51,027,700	$3,685,970	$54,713,670	$7,529,000	$1,057,500	$8,586,500	$58,556,700	$4,743,470	$63,300,170

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

ALBUQUERQUE HQ 65	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$3,719,600	$217,440	$3,937,040	$0	$0	$0	$3,719,600	$217,440	$3,937,040
DENTAL	0	216,000	216,000	0	0	0	0	216,000	216,000
MENTAL HEALTH	510,300	(46,600)	463,700	0	0	0	510,300	(46,600)	463,700
ALCOHOLISM	0	0	0	0	0	0	0	0	0
MAINTENANCE & REPAIR	0	0	0	0	0	0	0	0	0
REIMBURSEMENTS	0	20,250	20,250	0	0	0	0	20,250	20,250
TOTAL HEALTH DELIVERY	$4,229,900	$407,090	$4,636,990	$0	$0	$0	$4,229,900	$407,090	$4,636,990
CONTRACT CARE	0	0	0	0	0	0	0	0	0
TOTAL CLINICAL SERVICES	$4,229,900	$407,090	$4,636,990	$0	$0	$0	$4,229,900	$407,090	$4,636,990
PREVENTIVE HEALTH:									
SANITATION	$0	$163,000	$163,000	$0	$0	$0	$0	$163,000	$163,000
PUBLIC HEALTH NURSING	0	12,000	12,000	0	0	0	0	12,000	12,000
HEALTH EDUCATION	0	0	0	0	0	0	0	0	0
COMMUNITY HEALTH REPS	0	0	0	0	0	0	0	0	0
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$0	$175,000	$175,000	$0	$0	$0	$0	$175,000	$175,000
URBAN PROJECTS	0	0	0	0	0	0	0	0	0
INDIAN HLTH MANPOWER	0	5,000	5,000	0	0	0	0	5,000	5,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	2,258,600	100,500	2,359,100	0	0	0	2,258,600	100,500	2,359,100
TOTAL ALLOWANCES ISSUED	$6,488,500	$687,590	$7,176,090	$0	$0	$0	$6,488,500	$687,590	$7,176,090

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

BEMIDJI 46	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$8,473,300	$352,170	$8,825,470	$15,312,600	$1,090,900	$16,403,500	$23,785,900	$1,443,070	$25,228,970
DENTAL	579,900	137,800	717,700	421,100	6,700	427,800	1,001,000	144,500	1,145,500
MENTAL HEALTH	245,000	16,300	261,300	208,700	15,000	223,700	453,700	31,300	485,000
ALCOHOLISM	139,600	11,700	151,300	2,028,600	53,000	2,081,600	2,168,200	64,700	2,232,900
MAINTENANCE & REPAIR	0	201,000	201,000	0	16,700	16,700	0	217,700	217,700
REIMBURSEMENTS	0	19,400	19,400	0	0	0	0	19,400	19,400
TOTAL HEALTH DELIVERY	$9,437,800	$739,170	$10,176,970	$17,971,000	$1,182,300	$19,153,300	$27,408,800	$1,921,470	$29,330,270
CONTRACT CARE	3,339,600	370,900	3,710,500	7,847,200	555,300	8,402,500	11,186,800	926,200	12,113,000
TOTAL CLINICAL SERVICES	$12,777,400	$1,110,070	$13,887,470	$25,818,200	$1,737,600	$27,555,800	$38,595,600	$2,847,670	$41,443,270
PREVENTIVE HEALTH:									
SANITATION	$1,462,700	$58,500	$1,521,200	$127,300	$0	$127,300	$1,590,000	$58,500	$1,648,500
PUBLIC HEALTH NURSING	0	14,200	14,200	411,600	40,000	451,600	411,600	54,200	465,800
HEALTH EDUCATION	10,900	28,000	38,900	90,300	45,000	135,300	101,200	73,000	174,200
COMMUNITY HEALTH REPS	1,000	5,000	6,000	1,980,500	33,300	2,013,800	1,981,500	38,300	2,019,800
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$1,474,600	$106,500	$1,581,100	$2,609,700	$118,300	$2,728,000	$4,084,300	$224,800	$4,309,100
URBAN PROJECTS	0	0	0	0	1,710,400	1,710,400	0	1,710,400	1,710,400
INDIAN HLTH MANPOWER	0	23,000	23,000	0	0	0	0	23,000	23,000
TRIBAL MANAGEMENT	103,300	0	103,300	0	0	0	103,300	0	103,300
DIRECT OPERATIONS	957,800	26,600	984,400	0	0	0	957,800	26,600	984,400
TOTAL ALLOWANCES ISSUED	$15,313,100	$1,266,170	$16,579,270	$28,427,900	$3,574,300	$32,002,200	$43,741,000	$4,840,470	$48,581,470

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

BILLINGS 47

	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$23,508,300	$1,957,070	$25,465,370	$2,090,600	$0	$2,090,600	$25,598,900	$1,957,070	$27,555,970
DENTAL	2,035,000	174,700	2,209,700	0	0	0	2,035,000	174,700	2,209,700
MENTAL HEALTH	1,077,900	25,800	1,103,700	63,900	3,000	66,900	1,141,800	28,800	1,170,600
ALCOHOLISM	614,700	45,000	659,700	1,560,500	50,000	1,610,500	2,175,200	95,000	2,270,200
MAINTENANCE & REPAIR	0	648,000	648,000	0	0	0	0	648,000	648,000
REIMBURSEMENTS	0	79,600	79,600	0	0	0	0	79,600	79,600
TOTAL HEALTH DELIVERY	$27,235,900	$2,930,170	$30,166,070	$3,715,000	$53,000	$3,768,000	$30,950,900	$2,983,170	$33,934,070
CONTRACT CARE	21,277,700	355,900	21,633,600	27,300	5,000	32,300	21,305,000	360,900	21,665,900
TOTAL CLINICAL SERVICES	$48,513,600	$3,286,070	$51,799,670	$3,742,300	$58,000	$3,800,300	$52,255,900	$3,344,070	$55,599,970
PREVENTIVE HEALTH:									
SANITATION	$1,089,600	$21,500	$1,111,100	$175,400	$0	$175,400	$1,265,000	$21,500	$1,286,500
PUBLIC HEALTH NURSING	798,200	11,800	810,000	227,100	(10,000)	217,100	1,025,300	1,800	1,027,100
HEALTH EDUCATION	239,500	6,000	245,500	167,700	0	167,700	407,200	6,000	413,200
COMMUNITY HEALTH REPS	297,800	0	297,800	1,956,600	50,500	2,007,100	2,254,400	50,500	2,304,900
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$2,425,100	$39,300	$2,464,400	$2,526,800	$40,500	$2,567,300	$4,951,900	$79,800	$5,031,700
URBAN PROJECTS	0	0	0	0	626,400	626,400	0	626,400	626,400
INDIAN HLTH MANPOWER	0	80,000	80,000	0	0	0	0	80,000	80,000
TRIBAL MANAGEMENT	146,200	3,500	149,700	0	0	0	146,200	3,500	149,700
DIRECT OPERATIONS	1,501,400	(23,400)	1,478,000	0	0	0	1,501,400	(23,400)	1,478,000
TOTAL ALLOWANCES ISSUED	$52,586,300	$3,385,470	$55,971,770	$6,269,100	$724,900	$6,994,000	$58,855,400	$4,110,370	$62,965,770

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

CALIFORNIA 41	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$3,873,900	$46,500	$3,920,400	$24,043,800	$914,670	$24,958,470	$27,917,700	$961,170	$28,878,870
DENTAL	2,100	0	2,100	371,900	5,000	376,900	374,000	5,000	379,000
MENTAL HEALTH	0	10,500	10,500	250,100	19,800	269,900	250,100	30,300	280,400
ALCOHOLISM	0	13,900	13,900	3,313,400	41,000	3,354,400	3,313,400	54,900	3,368,300
MAINTENANCE & REPAIR	0	0	0	0	0	0	0	0	0
REIMBURSEMENTS	0	5,500	5,500	0	6,000	6,000	0	11,500	11,500
TOTAL HEALTH DELIVERY	$3,876,000	$76,400	$3,952,400	$27,979,200	$986,470	$28,965,670	$31,855,200	$1,062,870	$32,918,070
CONTRACT CARE	0	10,000	10,000	1,648,400	545,800	2,194,200	1,648,400	555,800	2,204,200
TOTAL CLINICAL SERVICES	$3,876,000	$86,400	$3,962,400	$29,627,600	$1,532,270	$31,159,870	$33,503,600	$1,618,670	$35,122,270
PREVENTIVE HEALTH:									
SANITATION	$1,067,700	$58,300	$1,126,000	$32,300	$0	$32,300	$1,100,000	$58,300	$1,158,300
PUBLIC HEALTH NURSING	0	0	0	146,500	0	146,500	146,500	0	146,500
HEALTH EDUCATION	69,100	5,200	74,300	15,000	0	15,000	84,100	5,200	89,300
COMMUNITY HEALTH REPS	9,300	0	9,300	943,500	123,100	1,066,600	952,800	123,100	1,075,900
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$1,146,100	$63,500	$1,209,600	$1,137,300	$123,100	$1,260,400	$2,283,400	$186,600	$2,470,000
URBAN PROJECTS	0	5,500	5,500	0	2,512,400	2,512,400	0	2,517,900	2,517,900
INDIAN HLTH MANPOWER	0	0	0	0	0	0	0	0	0
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	952,700	0	952,700	0	0	0	952,700	0	952,700
TOTAL ALLOWANCES ISSUED	$5,974,800	$155,400	$6,130,200	$30,764,900	$4,167,770	$34,932,670	$36,739,700	$4,323,170	$41,062,870

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

NASHVILLE 51	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$9,339,100	$215,170	$9,554,270	$13,062,800	$248,100	$13,310,900	$22,401,900	$463,270	$22,865,170
DENTAL	620,400	95,000	715,400	81,600	0	81,600	702,000	95,000	797,000
MENTAL HEALTH	17,800	24,500	42,300	364,600	0	364,600	382,400	24,500	406,900
ALCOHOLISM	157,000	55,000	212,000	1,366,400	0	1,366,400	1,524,200	55,000	1,579,200
MAINTENANCE & REPAIR	0	265,900	265,900	0	27,600	27,600	0	293,500	293,500
REIMBURSEMENTS	0	56,440	56,440	0	0	0	0	56,440	56,440
TOTAL HEALTH DELIVERY	$10,135,100	$712,010	$10,847,110	$14,875,400	$275,700	$15,151,100	$25,010,500	$987,710	$25,998,210
CONTRACT CARE	1,952,000	205,000	2,157,000	7,253,400	0	7,253,400	9,205,400	205,000	9,410,400
TOTAL CLINICAL SERVICES	$12,087,100	$917,010	$13,004,110	$22,128,800	$275,700	$22,404,500	$34,215,900	$1,192,710	$35,408,610
PREVENTIVE HEALTH:									
SANITATION	$638,400	$18,700	$657,100	$61,600	$0	$61,600	$700,000	$18,700	$718,700
PUBLIC HEALTH NURSING	151,500	0	151,500	146,400	0	146,400	297,900	0	297,900
HEALTH EDUCATION	87,300	0	87,300	13,800	0	13,800	101,100	0	101,100
COMMUNITY HEALTH REPS	0	0	0	1,425,900	101,800	1,527,700	1,425,900	101,800	1,527,700
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$877,200	$18,700	$895,900	$1,647,700	$101,800	$1,749,500	$2,524,900	$120,500	$2,645,400
URBAN PROJECTS	0	0	0	0	305,700	305,700	0	305,700	305,700
INDIAN HLTH MANPOWER	0	37,000	37,000	0	0	0	0	37,000	37,000
TRIBAL MANAGEMENT	0	0	0	0	4,900	4,900	0	4,900	4,900
DIRECT OPERATIONS	1,263,000	20,000	1,283,000	0	0	0	1,263,000	20,000	1,283,000
TOTAL ALLOWANCES ISSUED	$14,227,300	$992,710	$15,220,010	$23,776,500	$688,100	$24,464,600	$38,003,800	$1,680,810	$39,684,610

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

NAVAJO 54

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$72,582,300	$6,175,570	$78,757,870	$3,711,900	$282,600	$3,994,500	$76,294,200	$6,458,170	$82,752,370
DENTAL	5,305,000	406,300	5,711,300	0	0	0	5,305,000	406,300	5,711,300
MENTAL HEALTH	1,777,700	70,400	1,848,100	0	0	0	1,777,700	70,400	1,848,100
ALCOHOLISM	103,000	54,300	157,300	2,479,500	0	2,479,500	2,582,500	54,300	2,636,800
MAINTENANCE & REPAIR	0	1,096,600	1,096,600	0	0	0	0	1,096,600	1,096,600
REIMBURSEMENTS	0	685,900	685,900	0	0	0	0	685,900	685,900
TOTAL HEALTH DELIVERY	$79,768,000	$9,289,070	$89,057,070	$6,191,400	$282,600	$6,474,000	$85,959,400	$9,571,670	$95,531,070
CONTRACT CARE	21,309,700	2,056,800	23,366,500	297,700	0	297,700	21,607,400	2,056,800	23,664,200
TOTAL CLINICAL SERVICES	$101,077,700	$11,345,870	$112,423,570	$6,489,100	$282,600	$6,771,700	$107,566,800	$11,628,470	$119,195,270
PREVENTIVE HEALTH:									
SANITATION	$4,000,000	$47,200	$4,047,200	$0	$0	$0	$4,000,000	$47,200	$4,047,200
PUBLIC HEALTH NURSING	2,988,000	30,900	3,018,900	393,000	0	393,000	3,381,000	30,900	3,411,900
HEALTH EDUCATION	15,500	500	16,000	670,400	0	670,400	685,900	500	686,400
COMMUNITY HEALTH REPS	0	17,200	17,200	3,394,000	39,200	3,433,200	3,394,000	56,400	3,450,400
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$7,003,500	$95,800	$7,099,300	$4,458,200	$39,200	$4,497,400	$11,461,700	$135,000	$11,596,700
URBAN PROJECTS	0	0	0	0	0	0	0	0	0
INDIAN HLTH MANPOWER	0	80,000	80,000	0	0	0	0	80,000	80,000
TRIBAL MANAGEMENT	0	0	0	0	0	0	0	0	0
DIRECT OPERATIONS	2,216,400	10,000	2,226,400	0	0	0	2,216,400	10,000	2,226,400
TOTAL ALLOWANCES ISSUED	$110,297,600	$11,531,670	$121,829,270	$10,947,300	$321,800	$11,269,100	$121,244,900	$11,853,470	$133,098,370

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

OKLAHOMA 50	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$50,586,900	$2,162,970	$52,749,870	$16,025,400	$93,300	$16,118,700	$66,612,300	$2,256,270	$68,868,570
DENTAL	4,463,500	492,000	4,955,500	815,500	0	815,500	5,279,000	492,000	5,771,000
MENTAL HEALTH	993,000	40,600	1,033,600	383,500	7,500	391,000	1,376,500	48,100	1,424,600
ALCOHOLISM	15,000	18,300	33,300	2,562,200	42,000	2,604,200	2,577,200	60,300	2,637,500
MAINTENANCE & REPAIR	0	1,445,000	1,445,000	0	101,100	101,100	0	1,546,100	1,546,100
REIMBURSEMENTS	0	222,290	222,290	0	0	0	0	222,290	222,290
TOTAL HEALTH DELIVERY	$56,058,400	$4,381,160	$60,439,560	$19,786,600	$243,900	$20,030,500	$75,845,000	$4,625,060	$80,470,060
CONTRACT CARE	16,635,900	1,360,600	17,996,500	4,319,000	50,000	4,369,000	20,954,900	1,410,600	22,365,500
TOTAL CLINICAL SERVICES	$72,694,300	$5,741,760	$78,436,060	$24,105,600	$293,900	$24,399,500	$96,799,900	$6,035,660	$102,835,560
PREVENTIVE HEALTH:									
SANITATION	$2,228,100	($56,000)	$2,172,100	$496,900	$0	$496,900	$2,725,000	($56,000)	$2,669,000
PUBLIC HEALTH NURSING	1,103,400	66,400	1,169,800	636,700	0	636,700	1,740,100	66,400	1,806,500
HEALTH EDUCATION	286,600	58,600	345,200	137,600	0	137,600	424,200	58,600	482,800
COMMUNITY HEALTH REPS	57,900	0	57,900	4,300,000	54,800	4,354,800	4,357,900	54,800	4,412,700
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$3,676,000	$69,000	$3,745,000	$5,571,200	$54,800	$5,626,000	$9,247,200	$123,800	$9,371,000
URBAN PROJECTS	0	0	0	0	824,500	824,500	0	824,500	824,500
INDIAN HLTH MANPOWER	0	108,000	108,000	0	0	0	0	108,000	108,000
TRIBAL MANAGEMENT	292,400	0	292,400	0	0	0	292,400	0	292,400
DIRECT OPERATIONS	2,180,300	(9,900)	2,170,400	0	0	0	2,180,300	(9,900)	2,170,400
TOTAL ALLOWANCES ISSUED	$78,843,000	$5,908,860	$84,751,860	$29,676,800	$1,173,200	$30,850,000	$108,519,800	$7,082,060	$115,601,860

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

PHOENIX 40

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$56,546,700	$5,343,670	$61,890,370	$4,635,500	$0	$4,635,500	$61,182,200	$5,343,670	$66,525,870
DENTAL	2,763,800	364,000	3,127,800	42,200	0	42,200	2,806,000	364,000	3,170,000
MENTAL HEALTH	1,011,400	91,600	1,103,000	383,600	0	383,600	1,395,000	91,600	1,486,600
ALCOHOLISM	293,300	54,000	347,300	2,109,000	0	2,109,000	2,402,300	54,000	2,456,300
MAINTENANCE & REPAIR	0	1,413,000	1,413,000	0	0	0	0	1,413,000	1,413,000
REIMBURSEMENTS	0	2,641,450	2,641,450	0	0	0	0	2,641,450	2,641,450
TOTAL HEALTH DELIVERY	$60,615,200	$9,907,720	$70,522,920	$7,170,300	$0	$7,170,300	$67,785,500	$9,907,720	$77,693,220
CONTRACT CARE	16,828,600	1,314,200	18,142,800	20,200	0	20,200	16,848,800	1,314,200	18,163,000
TOTAL CLINICAL SERVICES	$77,443,800	$11,221,920	$88,665,720	$7,190,500	$0	$7,190,500	$84,634,300	$11,221,920	$95,856,220
PREVENTIVE HEALTH:									
SANITATION	$2,463,000	$134,400	$2,597,400	$37,000	$0	$37,000	$2,500,000	$134,400	$2,634,400
PUBLIC HEALTH NURSING	2,075,100	142,200	2,217,300	144,000	0	144,000	2,219,100	142,200	2,361,300
HEALTH EDUCATION	499,400	49,400	548,800	177,100	3,400	180,500	676,500	52,800	729,300
COMMUNITY HEALTH REPS	27,400	0	27,400	3,067,000	59,700	3,126,700	3,094,400	59,700	3,154,100
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$5,064,900	$326,000	$5,390,900	$3,425,100	$63,100	$3,488,200	$8,490,000	$389,100	$8,879,100
URBAN PROJECTS	0	0	0	0	660,700	660,700	0	660,700	660,700
INDIAN HLTH MANPOWER	0	98,000	98,000	0	0	0	0	98,000	98,000
TRIBAL MANAGEMENT	174,900	0	174,900	4,700	0	4,700	179,600	0	179,600
DIRECT OPERATIONS	1,966,900	51,500	2,018,400	0	0	0	1,966,900	51,500	2,018,400
TOTAL ALLOWANCES ISSUED	$84,650,500	$11,697,420	$96,347,920	$10,620,300	$723,800	$11,344,100	$95,270,800	$12,421,220	$107,692,020

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

PORTLAND 64	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$13,518,200	$1,626,870	$15,145,070	$6,342,400	$36,100	$6,378,500	$19,860,600	$1,662,970	$21,523,570
DENTAL	1,608,900	361,000	1,969,900	19,100	0	19,100	1,628,000	361,000	1,989,000
MENTAL HEALTH	664,100	45,600	709,700	465,600	0	465,600	1,129,700	45,600	1,175,300
ALCOHOLISM	10,000	492,600	502,600	4,521,200	0	4,521,200	4,531,200	492,600	5,023,800
MAINTENANCE & REPAIR	0	261,900	261,900	0	0	0	0	261,900	261,900
REIMBURSEMENTS	0	312,090	312,090	0	0	0	0	312,090	312,090
TOTAL HEALTH DELIVERY	$15,801,200	$3,100,060	$18,901,260	$11,348,300	$36,100	$11,384,400	$27,149,500	$3,136,160	$30,285,660
CONTRACT CARE	19,725,500	104,100	19,829,600	3,136,600	0	3,136,600	22,862,100	104,100	22,966,200
TOTAL CLINICAL SERVICES	$35,526,700	$3,204,160	$38,730,860	$14,484,900	$36,100	$14,521,000	$50,011,600	$3,240,260	$53,251,860
PREVENTIVE HEALTH:									
SANITATION	$1,262,200	$40,700	$1,302,900	$97,800	$0	$97,800	$1,360,000	$40,700	$1,400,700
PUBLIC HEALTH NURSING	667,600	46,700	714,300	102,900	0	102,900	770,500	46,700	817,200
HEALTH EDUCATION	259,900	35,600	295,500	62,400	0	62,400	322,300	35,600	357,900
COMMUNITY HEALTH REPS	0	0	0	2,261,200	51,200	2,312,400	2,261,200	51,200	2,312,400
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$2,189,700	$123,000	$2,312,700	$2,524,300	$51,200	$2,575,500	$4,714,000	$174,200	$4,888,200
URBAN PROJECTS	0	200,000	200,000	0	1,730,800	1,730,800	0	1,930,800	1,930,800
INDIAN HLTH MANPOWER	0	29,000	29,000	0	0	0	0	29,000	29,000
TRIBAL MANAGEMENT	128,000	0	128,000	0	0	0	128,000	0	128,000
DIRECT OPERATIONS	1,664,700	13,800	1,678,500	0	0	0	1,664,700	13,800	1,678,500
TOTAL ALLOWANCES ISSUED	$39,509,100	$3,569,960	$43,079,060	$17,009,200	$1,818,100	$18,827,300	$56,518,300	$5,388,060	$61,906,360

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

TUCSON 42

ACTIVITY/SUB-ACTIVITY	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$8,672,700	$1,268,270	$9,940,970	$846,000	$3,300	$849,300	$9,518,700	$1,271,570	$10,790,270
DENTAL	405,000	25,000	430,000	0	0	0	405,000	25,000	430,000
MENTAL HEALTH	252,300	16,300	268,600	5,100	0	5,100	257,400	16,300	273,700
ALCOHOLISM	46,600	39,000	85,600	459,600	0	459,600	506,200	39,000	545,200
MAINTENANCE & REPAIR	0	256,000	256,000	0	0	0	0	256,000	256,000
REIMBURSEMENTS	0	194,400	194,400	0	0	0	0	194,400	194,400
TOTAL HEALTH DELIVERY	$9,376,600	$1,798,970	$11,175,570	$1,310,700	$3,300	$1,314,000	$10,687,300	$1,802,270	$12,489,570
CONTRACT CARE	5,194,400	296,900	5,491,300	0	0	0	5,194,400	296,900	5,491,300
TOTAL CLINICAL SERVICES	$14,571,000	$2,095,870	$16,666,870	$1,310,700	$3,300	$1,314,000	$15,881,700	$2,099,170	$17,980,870
PREVENTIVE HEALTH:									
SANITATION	$475,000	$73,200	$548,200	$0	$0	$0	$475,000	$73,200	$548,200
PUBLIC HEALTH NURSING	324,300	25,000	349,300	0	0	0	324,300	25,000	349,300
HEALTH EDUCATION	0	0	0	0	0	0	0	0	0
COMMUNITY HEALTH REPS	0	(27,100)	(27,100)	1,113,400	163,700	1,277,100	1,113,400	136,600	1,250,000
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$799,300	$71,100	$870,400	$1,113,400	$163,700	$1,277,100	$1,912,700	$234,000	$2,147,500
URBAN PROJECTS	0	0	0	0	205,000	205,000	0	205,000	205,000
INDIAN HLTH MANPOWER	0	24,000	24,000	0	0	0	0	24,000	24,000
TRIBAL MANAGEMENT	0	275,000	275,000	0	0	0	0	275,000	275,000
DIRECT OPERATIONS	1,008,000	5,000	1,013,000	0	0	0	1,008,000	5,000	1,013,000
TOTAL ALLOWANCES ISSUED	$16,379,100	$2,470,970	$18,850,070	$2,424,100	$372,000	$2,796,100	$18,803,200	$2,842,970	$21,646,170

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

HEADQUARTERS 94	FEDERAL HEALTH ADMINISTRATION			TRIBAL HEALTH ADMINISTRATION			TOTAL AREA FY 1989 ALLOCATION		
ACTIVITY/SUB-ACTIVITY	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL	RECURRING	NON-RECURRING	TOTAL
CLINICAL SERVICES:									
HOSPITALS & CLINICS	$23,786,300	$5,300,000	$29,086,300	$0	$0	$0	$23,786,300	$5,300,000	$29,086,300
DENTAL	0	35,200	35,200	0	0	0	0	35,200	35,200
MENTAL HEALTH	0	18,900	18,900	0	0	0	0	18,900	18,900
ALCOHOLISM	0	40,800	40,800	0	0	0	0	40,800	40,800
MAINTENANCE & REPAIR	0	5,400	5,400	0	0	0	0	5,400	5,400
REIMBURSEMENTS	0	668,500	668,500	0	0	0	0	668,500	668,500
TOTAL HEALTH DELIVERY	$23,786,300	$6,068,800	$29,855,100	$0	$0	$0	$23,786,300	$6,068,800	$29,855,100
CONTRACT CARE	0	2,209,000	2,209,000	0	0	0	0	2,209,000	2,209,000
TOTAL CLINICAL SERVICES	$23,786,300	$8,277,800	$32,064,100	$0	$0	$0	$23,786,300	$8,277,800	$32,064,100
PREVENTIVE HEALTH:									
SANITATION	$0	$169,900	$169,900	$0	$0	$0	$0	$169,900	$169,900
PUBLIC HEALTH NURSING	0	104,300	104,300	0	0	0	0	104,300	104,300
HEALTH EDUCATION	0	4,600	4,600	0	0	0	0	4,600	4,600
COMMUNITY HEALTH REPS	0	68,600	68,600	0	0	0	0	68,600	68,600
IMMUNIZATION	0	0	0	0	0	0	0	0	0
TOTAL PREVENTIVE HEALTH	$0	$347,400	$347,400	$0	$0	$0	$0	$347,400	$347,400
URBAN PROJECTS	0	350,000	350,000	0	0	0	0	350,000	350,000
INDIAN HLTH MANPOWER	0	6,923,000	6,923,000	0	0	0	0	6,923,000	6,923,000
TRIBAL MANAGEMENT	0	0	0	0	2,085,100	2,085,100	0	2,085,100	2,085,100
DIRECT OPERATIONS	19,225,900	1,347,700	20,573,600	0	0	0	19,225,900	1,347,700	20,573,600
TOTAL ALLOWANCES ISSUED	$43,012,200	$17,245,900	$60,258,100	$0	$2,085,100	$2,085,100	$43,012,200	$19,331,000	$62,343,200

SERVICES APPROPRIATION
RECURRING/NON-RECURRING ALLOCATIONS FOR FY 1989
SEPTEMBER 30, 1989 FINAL

REGIONAL OFFICES	FEDERAL HEALTH ADMINISTRATION		
ACTIVITY/SUB-ACTIVITY CLINICAL SERVICES:	RECURRING	NON-RECURRING	TOTAL
REGION II - NEW YORK			
HOSPITAL & CLINICS	$135,400	$0	$135,400
REGION IV - DALLAS			
HOSPITAL & CLINICS	$1,464,400	$0	$1,464,400
REGION X - SEATTLE			
HOSPITAL & CLINICS	$1,937,200	$8,000	$1,945,200
TOTAL REGIONAL OFFICES	$3,537,000	$8,000	$3,545,000

DENTAL CARE

Question. According to the IHS (p. 72) only 32 percent of the eligible population received dental examinations in FY 1988. Is this correct? Did 68 percent of your service population go without dental examinations in 1988?

Answer. Yes, 32 percent reflects the number of persons seeking dental care as a ratio of the total IHS eligible population. In the U.S. population at large 60 percent of the total population receive dental care each year.

Question. Why is this percentage so low? Is there a focus only on emergency treatment, or treatment for children?

Answer. Access to dental care is low in the IHS for several reasons. Indian people have a much higher rate of dental disease than the overall populations, generally two times the rate of dental caries for instance. Given the high rate of population growth in Indian communities and the high level of dental care needed, IHS capacity has not kept up with demand.

The IHS has established a Levels of Services concept to assist in the equitable distribution of care. The highest priority for care being emergency services followed by preventive services, routine restorative care, then by more complex rehabilitative care. Annually, 93 percent of services provided by the IHS are basic services (emergency, preventive, routine restorative). In the past, the IHS put priority on care for children; however, emphasis is now placed on family oriented care and in FY 1989 48 percent of services were provided to persons over 20 years of age.

Question. On average, how often does an eligible adult Indian receive a dental examination and care?

Answer. Based on examination data, an eligible adult Indian receives a dental examination and dental treatment every three years. Generally, the treatment provided is basic dental care which is not always the total dental treatment required by the patient. The untreated disease then becomes part of the backlog of dental treatment needs of Native Americans.

Question. By not receiving dental examinations on a regular basis, aren't more costly dental treatments likely in the future for individuals?

Answer. Yes. The IHS focuses on the provision of basic services that preserve the dentition and prevent further deterioration. Over 93 percent of our services are provided in this category or as emergency services.

Question. What is the backlog of restorative needs of adults? How much of this backlog gets addressed annually? How much gets added annually?

Answer. The backlog of restorative need for adults is considerable. Nearly 80 percent of the treatment needs per patient examined are attributable to backlog, i.e., disease whose treatment has been deferred for more than one year. Little of this backlog gets addressed annually. Although some corrective and rehabilitative services are provided, current resources do not allow us to keep up with the new disease which develops each year. Thus, the backlog increases each year. It is hoped that our recent emphasis on preventive measures will reduce the incidence of new disease and allow some incremental reductions in backlog.

Question. How many dentists are included in the IHS workforce? What is the average patient load per dentist?

Answer. The IHS currently employs about 320 dental officers. If one adds full-time equivalent dentists working in tribal programs (65), the ratio of patients to dentists is approximately 830 patients treated per dentist annually. This compares to approximately 982 patients treated per dentist annually for the U.S. as a whole. The IHS dentist to population ratio is about 1:2,700 compared to about 1:1,600 for the U.S. as a whole.

CATASTROPHIC HEALTH EMERGENCY FUNDS (CHEF)

Question. In FY 1989, Congress appropriated $10 million for the Catastrophic Health Emergency Fund. The fund is intended as a resource to address the extraordinary costs of catastrophic health care cases (those where costs exceed $15,000), so that the regular contract care funds are not exhausted by these expensive cases. An additional $2 million was appropriated for this purpose in FY 1990. What was your experience with the catastrophic health fund in FY 1989? How many cases were eligible? How many were addressed?

Answer. Catastrophic illnesses/events occurred with such frequency in all IHS Areas, that we were unable to fully reimburse service units and tribally operated CHS programs in FY 1989. In FY 1989, 825 catastrophic cases were eligible for CHEF reimbursement. Of these cases, 698 were fully or partially funded totaling $12,065,000. The remaining 127 catastrophic cases were not reimbursed to the Areas as there were no more funds available in the CHEF.

Question. What are the estimated costs of eligible cases?

Answer. The demand for CHEF by IHS Area is summarized in the table below.

IHS Area	Amount eligible 1/ From CHEF	Amount Received	Unfunded Demand
Aberdeen	$722,000	$641,000	$81,000
Alaska	3,275,000	1,989,000	1,286,000
Albuquerque	1,036,000	562,000	474,000
Bemidji	73,000	8,000	65,000
Billings	208,000	208,000	0

California	48,000	23,000	25,000
Nashville	505,000	404,000	101,000
Navajo	4,555,000	3,275,000	1,280,000
Oklahoma	2,824,000	1,987,000	837,000
Phoenix	2,795,000	2,109,000	686,000
Portland	941,000	761,000	180,000
Tucson	130,000	98,000	32,000
TOTAL	$17,112,000	$12,065,000	$5,047,000

1/ Only cases not reimbursed through Medicaid, Medicare or other party insurers are eligible for reimbursement from the CHEF.

Question. Were all the funds expended in FY 1989?

Answer. Yes, the CHEF was fully utilized in FY 1989, with $12,065,000 being allocated to IHS Areas for their catastrophic claims.

Question. How are decisions made regarding expenditures from the fund? Is it on a first come, first serve basis?

Answer. A Fund Manager who has been appointed to manage and coordinate the activities of the Catastrophic Health Emergency Fund (CHEF) at IHS Headquarters, reviews each catastrophic claim and authorizes reimbursement of claims which satisfies established criteria and subject to availability of funds. Catastrophic claims are processed as they are received from IHS Areas on a first come, first served basis.

Question. What funding is provided for catastrophic cases once this fund is exhausted? Does the regular contract care program cover these costs?

Answer. When the resources of the CHEF are completely exhausted, the IHS' service units and tribal P.L. 93-638 CHS programs, absorb within their CHS funding allowances, the total cost of the catastrophic illnesses/events.

CONTRACT HEALTH SERVICES

Question. What funds would be necessary to address all of the eligible cases up to the maximum allowable amount? Would this amount exceed any authorization?

Answer. A total of $17,112,000 of Catastrophic Health Emergency Funds (CHEF) was needed to fully fund all of Fiscal Year (FY) 1989 catastrophic cases. We estimated that a similar amount of funds would be necessary to fully fund catastrophic cases in FY 1990. The authorized level of funding under section 202 of Public

Law (P.L.) 100-713 (Indian Health Care Amendments of 1988) is $12 million.

FISCAL YEAR	TOTAL ELIGIBLE FROM CHEF	AMOUNT 1/ REIMBURSED	UNFUNDED 2/ DEMAND
1989	$17,112,000	$12,065,000	$5,047,000

1/ CHEF availability is made up of the following: $10 million from IHS Appropriations for the CHEF Program, $754,000 received from Tort claims recovered under the authority of Federal Medical Care Recovery Act, and $1,311,000 recovered from prior year catastrophic cases which were paid directly to providers by alternate resources.

2/ CHEF was not reimbursed to IHS Areas since all available resources were exhausted. IHS' service units and tribal P.L. 93-638 CHS programs absorbed these cost within their CHS budgets at the end of the year.

DIABETES TREATMENTS

Question. The budget justification indicates that in 1978, 35 American Indian/Alaska Natives individuals were reported with end-stage renal disease requiring dialysis. By 1987, this figure had risen to 1,150 individuals. This is an increase of over 3,000 percent. What steps is IHS taking to combat this disease and prevent such staggering increases?

Answer. The number of American Indians/Alaska Natives with end-stage renal disease was underreported in 1978. Nonetheless, the problem has increased dramatically. Seventeen service units have dialysis services on the reservation in cooperation with private vendors. The Medicare End-Stage Renal Disease (ESRD) Program reimburses the vendors for most patients. IHS spent 3 million to support ESRD treatment in FY 1989. Individuals with kidney disease receive care through outpatient and inpatient facilities. Every effort is made to control hypertension in diabetic patients - the only strategy known to retard progression of the kidney disease of diabetes.

Question. Does this represent sufficient attention given the magnitude of this problem in Indian country?

Answer. These nephrologists will provide the professional core for renal consultation and for enhanced ESRD program development. IHS anticipates additional ESRD program support and growth.

Question. Where are these physicians located? How do you ensure that services are provided where necessary?

Answer. Albuquerque Area has a nephrologist and Phoenix Area will have one this summer. In general, local service units coordinate needed care through private vendors using contract health service and Medicare.

Question. What are the equipment requirements for dealing with this disease? How are needs determined for the different service units and areas?

Answer. IHS does not provide dialysis directly. The equipment requirements for treating end-stage renal disease are determined by the local vendors who establish units and receive Medicare reimbursement for providing services IHS does not receive a referral fee from local vendors.

HOSPITALS AND CLINICS

Question. In the FY 1990 budget justification, IHS indicated that approximately $31 million was held in reserve at headquarters to address special requirements. This year, the initial reserve is projected to be $40.7 million, an increase of nearly 30 percent over last year. Why has the reserve grown so much in the last year?

Answer. The reserves as shown in the justification were not finalized at the time the budget was printed. The final reserves amounted to $30,924,000, a reduction of $322,000 from FY 1989. The table below reflects the differences. It is important to notice that these funds are spent for field activities.

$000

	1989	1990	Revised 1990
Change of Station	$ 3,608	$ 6,481	6,397
Special Physician Pay	8,794	12,570	7,981
Evaluation and Research	2,313	2,500	1,922
Training	5,490	6,375	2,700
Recruitment	2,765	2,994	3,014
Resource Patient Management System	2,500	2,500	2,237
Emergencies and Equipment	5,776	7,235	6,673
Total	$31,246	$40,655	30,924

Question. The budget justification indicates that approximately $74.7 million will be obligated in FY 1990 for supplies and equipment. An estimate of $49.5 million for supplies is projected in the table on page 95. For equipment, $6.6 million is projected for new equipment and $12.6 million is estimated for replacement equipment. What is the remaining $6 million projected to be spent on?

Answer. The remaining $6 million will be used for: $2.1 million for other non-medical supplies and $3.9 million for automatic data processing equipment.

Question. The budget identifies projected excess equipment purchases, by area, on pages 103-105. Why are no funds proposed for the Oklahoma City Area?

Answer. The question implies a misinterpretation of the budget justification. For instance, we do not purchase excess from any agency. We acquire the excess and usually the only expenditure of funds is the cost of shipping/transportation. By the time the budget was printed, Oklahoma had not submitted their acquisition of excess, this is the first year that this kind of information was included. We plan on improving our presentation in the future. For FY 1989 Oklahoma acquired $3,500.00 from excess.

Question. Separate from the equipment needs included in the Hospitals and Clinics portion of the budget, IHS is proposing to allocate some of the money collected form third party insurers to equipment purchases ($2.5m in FY 1990, $12m in FY 1991). What is the average replacement schedule for IHS equipment?

Answer. The average replacement schedule for IHS is 10 years. The VA supply Catalog is used for determining the normal expectancy and replacement of equipment.

Question. How does this compare with other hospitals, particularly those operated by the Department of Veterans Affairs and the Department of Defense? With other public hospitals?

Answer. The replacement of equipment for IHS in comparison with the VA and DOD is the same. We have no information on a comparison with private hospitals, but we believe that it would be comparable.

Question. Also proposed for funding from third party collections are additional funds ($4 million) for drugs and medical supplies. The budget (p. 139) indicates that there has been a decrease in the number of months supply available for hospitals and clinics. What is the average supply available for hospitals and clinics?

Answer. As of September 30, 1989, the average number of months supply in inventory for our hospitals and clinics was 4.4 months based on an average monthly issue value of $1,185,500 from inventory. As of March 31, 1990, the average number was 3.9 month.

Question. How has this changed since 1985?

Answer. As of September 30, 1985, the average number of months supply in inventory for our hospitals and clinics was 4.7 months based on an average monthly issue value of $896,600 from inventory. This represents a decrease of .3 months (approximately 9 days) supply from 1985 to 1989 with an increase of $188,900 per month in average issue value from inventory.

Question. How does this supply availability compare with other hospitals, such as those listed above?

Answer. No comparison of our inventory levels to VA or DOD is made as we have no comparable facilities in size, staffing, storage space and supply demand. The Economic Order Quantity (EOQ) Principle as outlined in Subpart 101.27.1 of the Federal Property Management Regulations is used to replenish stock inventory. Under this principle of stock replenishment a small hospital would have a higher number of months supply in inventory than a large hospital would or should. Example: A small hospital using an average of $10 worth of swabs per month would order a 12 months supply which equals an average of 6 months supply in inventory. Whereas, a large hospital using an average of $21 worth of swabs per month would order a 6 months supply which equals an average of 3 months supply in inventory. The average inventory value for both the small hospital and the large hospital is approximately $60.

Question. Are the supply shortages more critical at some locations than at others?

Answer. Shortage of supply funds at any location can be and is critical but can be more critical at locations with fewer number of personnel positions and/or other resources.

Question. What happens when supply runs out? How do you address these emergency needs?

Answer. What locations run out of regular supply funds, funds from lapsed personnel positions are used, personnel travel/training is reduced and/or eliminated, inventory levels are reduced, equipment purchases are delayed and/or eliminated, service contracts are delayed and/or eliminated and in some cases supplies may be borrowed from other facilities.

The off-set is from federally appropriated funds of the area or station affected.

Question. The budget fails to identify the funds allocated to the Alaska Community Health Aide and Village Built Clinic programs. Please identify the funds provided for these programs in FY 1990 and projected for FY 1991.

Answer. The following table reflects base funding plus Congressional increases to arrive at total funds allocated for these programs.

	Actual FY 1989	Projected thru FY 1990	Projected thru FY 1991
Alaska Community Health Aide	$10,044,765	$14,981,765	$15,800,000
Village Built Clinics	2,979,023	3,075,909	3,250,000
Total	$13,023,788	$18,057,674	$19,050,000

INDIRECT AND CONTRACT SUPPORT COSTS

Question. For FY 1991, IHS is proposing appropriation language that specifies funds are provided for the expenses of tribes, including "... the full funding of indirect and contract support costs of tribal contracts." Why is this appropriation language necessary if contract support costs are an allowable expense of tribes?

Answer. These funds can be provided without this language. This language is included to distinctly set aside funds for this purpose through the appropriation rather than through report language which is not legally binding. This has been done to remove barriers to self-determination sends a signal that these costs are fully funded.

Question. For what reason does IHS differentiate between contract support costs and indirect costs? Aren't they the same thing?

Answer. OMB has requested the separate accounting of indirect and contract support costs until such time as IHS can provide adequate, financially sound estimates of tribal indirect cost and contract support requirements. Essentially, indirect costs are costs which have standarized accounting procedures and which financial managers normally keep track. Contract support costs are more broadly-defined types of indirect costs which have not been accounted for separately (e.g. costs which IHS or the Federal Government does not bear directly, but which would be required by a P.L. 93-638 contractor to fully fund program operations).

Question. The Bureau of Indian Affairs appropriations language contains no similar proposal. Why would contract support funds be handled differently under IHS than BIA?

Answer. Once the regulations implementing P.L. 100-472 are promulgated, IHS and BIA will be required to handle contract support costs in the same manner insofar as funding individual contracts is concerned. However, from a budget formulation or accounting stand-point, IHS may be required to track these broad categories separately pending resolution of an accepted definition of 'contract support' occurs and some idea of the type and magnitude of non-traditional indirect costs is obtained.

Question. IHS proposes an increase of $6,521,000 for indirect cost funds (p. 82). Yet, these funds are not portrayed in any of the base-adjustment tables, nor are they requested in any of the programmatic increases. What programs does IHS propose to use as an offset for this increase? Why isn't this increase identified and justified properly?

Answer. The indirect cost increase is identified and properly justified. The increase of $6,521,000 for indirect cost funds is identified as the difference between FY 1991 Tribal Indirect Cost on the crosswalk table page IHS-30 in the amount of $78,381,000 and the crosswalk table page IHS-30 in the amount of $71,860,000 for Indirect Cost. The increase of $6,521,000 is included in the Budget line item Increased cost of health care provided under contracts or grants in the amount of $35,797,000, as reflected in the Summary of Change Table page IHS-16.

TRIBAL AND FEDERAL HEALTH ADMINISTRATION ACCOUNTS

Further appropriations language is proposed under the "Tribal Health Administration" that would permit the transfer of funds between that appropriation account and the proposed "Federal Indian Health Administration" appropriation account. But, such language is not proposed under the Federal account.

Question. What advice have you received from your legal counsel regarding transfer of funds using authority contained in a separate appropriation account?

Answer. The proposed language in the "Tribal Health Administration" reads in relevant part:

> Provided further, That funds may be transfered from and to the "Tribal Health Administration," and "Federal Indian Health Administration," appropriations for the purpose of the receiving appropriation (emphasis added).

We believe this language provides adequate authority to transfer funds between both appropriation accounts and are unaware of any legal problems caused by the language not appearing in both appropriation accounts. IHS will continue to follow Departmental approval procedures for funds transfer or reprogramming of apportioned funds.

Question. Would this language be more appropriately contained in the IHS administrative provisions?

Answer. Yes, this language would be more appropriately contained in the IHS administrative provision.

INFORMATION SYSTEMS

Question. The budget requests a total increase of $7,465,000 for enhancements and additions to the IHS computer system. Of the total, $1,650,000 and 37 FTEs are requested as a base adjustment, or built-in increase. Why are these resources added in the base which in its integrity, is only to reflect inflationary changes and not programmatic changes?

Answer. IHS requested 72 FTEs in the FY 1990 budget to support software application development and technical ADP support for the RPMS. When Congress approved half the request (35 FTEs/$1.45 million) for FY 1990, the IHS assumed that Congress recognized that all positions would not be filled by October 1, 1989. In the FY 1991 budget, IHS requested the remaining 37 FTEs/$1.65 million as a base adjustment. Technically, these additional FTEs and dollars for FY 1991 should have been identified as a new program increase.

Question. To what functions would the additional FTEs be assigned?

Answer. Additional FTEs will perform the following functions essential to RPMS:

1. Provide ADP support for hospitals and clinics;
2. Support development centers and applications development; and
3. Support central RPMS management and telecommunications.

Question. How much has been spent to date on the resource and patient management system? What is the projected total cost of this system?

Answer. From the RPMS inception in FY 1986 through FY 1989, $12,800,000 was expended for hardware procurement and support. Staffing was initially funded in FY 1990 for $1,450,000.

Over the five years beginning in FY 1990, $71,000,000 is the estimated cost to implement the system with a recurring cost of $18,000,000. In FY 1990, Congress funded the initial staffing; we have requested additional staffing and computer resources in FY 1991 as part of that five-year estimated cost.

Question. What are the various computer systems required to support the Resource Patient Management System? What different functions does each support?

Answer. The various computer systems required to support the RPMS are a series of 260 mini-computer systems distributed throughout the IHS and Tribal sites and a central mainframe.

The mini-computers support facility level patient management in an integrated patient database; the mainframe serves as the IHS repository for historical patient and statistical data.

Question. Is the procurement of new systems a higher priority than the upgrade or replacement of existing systems?

Answer. No, the number one priority is to upgrade or replace existing systems which need additional computing and storage capacity. There are a few sites which need new systems which presently do not have systems.

MENTAL HEALTH PROGRAMS

Question. The draft National Native American Mental Health Plan estimates that the FY 1989 level of staffing for mental health is less than half that required-to provide a "minimally adequate" level of mental health services. Further estimates suggest that mental health problems are associated with more than one-third of the demands made on health facilities for services. Wouldn't an investment in mental health services contribute to possible long-term savings in basic health services?

Answer. The Indian Health Service anticipates that increasing and improving mental health services for Native Americans may lead to long-term savings in basic health services. However, these saving will be very difficult to quantify; they would be related to reduced use of health services for psychological reasons. Mental health service increases may also lead to reduced need for inpatient psychiatric care,-reduced need for chronic care for impairments associated with psychiatric episodes (as suicide attempts, accidents), and increased benefits from life styles based on constructive ways of handling stress (reduced rates of substance abuse, violent behavior, obesity). Benefits are also anticipated from strengthening families with consequent general improvement in participation of family members in school, work, and communities.

Question. What plans does IHS have to address the critical shortage in the mental health field? How was the staffing situation changed with the additional resources provided in FY 1990?

Answer. To address the critical shortage in the mental health field, the IHS is working to identify and make full use of all accessible alternative resources through agencies and programs such as state mental health programs, mental health block grant programs, BIA, mental health resources in the schools, other governmental agencies such as tribal governments, rehabilitation services, voluntary agencies and foundations.

The IHS anticipates filling approximately 30 new staff positions for the Mental Health Program with the additional funds received for FY 1990. We anticipate a comparable number of positions will be funded in tribally operated programs. This represents approximately 50 percent of an estimated need.

Question. What funding is necessary to attain the "minimally adequate" level of services? How would such resources be allocated, by function?

Answer. The IHS estimates that an additional $25 million above the FY 1990 funding of $21.24 million allocated for mental health services is needed to provide a reasonable increase for mental health services for Native Americans.

If received, these additional funds would be distributed to IHS and tribally operated mental health programs at local levels in accordance with demonstrated need and consistent with IHS Resource Requirement Methodology (RRM). The funds would provide ambulatory mental health services focused on serving children and strengthening families, day programs for the chronically mentally ill, urban mental health services, increased training for mental health providers, and community education and program evaluation. A goal of the funding allocation would be to assure at least one mental health professional in each health care center or service unit.

Question. Are mental health services available at all facilities on a non-emergency basis?

Answer. The IHS estimates that mental health services on a non-emergency basis are available at about one-half of IHS and Tribal health programs.

Question. How many facilities have mental health services available only on an emergency basis?

Answer. The IHS estimates that approximately one-half of IHS and Tribal health programs have mental health services available only on an emergency or crisis basis.

ALCOHOLISM

Question. The budget indicated that IHS participates in Project CORK at Dartmouth Medical School. How much funding is provided in support of this project?

Answer. In Fiscal Year 1986, the National Institute on Alcohol Abuse and Alcoholism provided $30,000 to the Indian Health Service as a one-time effort to develop a primary care provider training program in conjunction with Project CORK at Dartmouth Medical School. The project was completed in 1989.

Question. What other entities contribute funds towards the operation of Project CORK? How much is contributed?

Answer. No other resources were involved.

Question. How are the materials from Project CORK used by IHS? How do these contribute to improving the health status of American Indians and Alaska Natives?

Answer. The IHS has established training sites and is training professional personnel, i.e., M.D.s, R.N.s, etc., in the field of alcoholism and substance abuse using these materials.

MAINTENANCE AND REPAIR

Question. What is the extent of the backlog of essential maintenance and repair deficiencies?

Answer. Approximately $94 million. The inventory system itemizing the deficiencies has been modified and the new version is presently being implemented. A revised estimate should be available by October 1, 1990.

Question. How much of this backlog are you addressing annually?

Answer. Approximately $7.5 million from the regular annual maintenance and repair allocation plus $10 million from the facilities repair and improvement appropriation will be used in FY 1990 to address the backlog of essential maintenance and repair deficiencies, to address code deficiencies, and to make alterations required to improve program functioning. These funds are primarily used to maintain the current condition of the facilities and are not sufficient to reduce the backlog of identified deficiencies.

The National Research Council estimates that between 2 and 4 percent of the replacement value of a building is needed each year to maintain its current condition. This means that $20 to $40 million is needed each year by IHS to preserve the status quo. With the large number of tribal facilities now starting to be included in the inventory of facilities evaluated for deficiencies, the backlog is expected to increase.

Question. How has the list changed in the past year?

Answer. With the changeover to the new personal computer-based deficiencies inventory system, each Area is conducting a comprehensive update of their deficiencies inventory. Outdated deficiencies are being removed and previously unentered or newly surveyed deficiencies are being added. Completion of this reevaluation process is expected at most Areas by the end of the fiscal year.

Question. What is the backlog for tribally-operated health clinics?

Answer. Comprehensive "Deep Look" surveys are being initiated at tribally-operated health clinics to determine the scope of deficiencies at those facilities. During FY 1989, Deep Look surveys were conducted at tribally-operated facilities in California. The total backlog of identified deficiencies in California is approximately $2.1 million.

Surveys at tribally-operated facilities in other Areas are being scheduled in FY 1990. However, surveys at all tribally- operated facilities may not be completed until FY 1992 due to the large number of necessary surveys.

Question. If maintenance and repair support for tribal facilities was previously funded from program contracts, shouldn't there be an offset from those costs, rather than a reduction in the level of maintenance and repair to be accomplished at Federal Indian Health facilities?

Answer. According to legal counsel, the Amendments to the Indian Health Care Improvement Act (P.L. 100-713, Sec. 711) require "provision of funds for health care programs and facilities operated by tribes" ... "on the same basis as such funds are provided to programs and facilities operated directly be the Service." This appears to preclude a direct offset for maintenance and repair, even where funds specifically for maintenance and repair (M&R) are included in existing "638" contracts.

In response, the IHS has combined both Federal and tribal facilities using the same criteria, into a single distribution methodology for M&R funds. A given site will receive the same amount of funds from the M&R account, whether it is IHS owned and operated, IHS owned and tribally operated, or tribally owned and operated.

Question. How much is proposed to be spent on these tribal facilities in FY 1991? What was the actual for FY 1989 and the estimate for FY 1990?

Answer. In FY 1990, $1.065 million in maintenance and repair funds will be allocated to tribal facilities and $1.1 million in FY 1991. Approximately 40 percent of the identified funds for each facility are given directly to the facility for daily operations and maintenance and for local projects. The remaining funds are aggregated into an area-wide account to be used for M&R projects that are beyond the capacity of a site to fund with a single year's share. Projects for both Federal and tribal facilities are ranked together for distribution of these funds.

In FY 1989, no funds were spent at tribally-owned facilities from the maintenance and repair allocation.

Question. IHS is proposing a changeover in the deficiencies system database to a personal computer-based system that will be operated at the Area level. What mechanism will the central office use to assess national priorities for maintenance and repair (M&R)?

Answer. Each Area provides an Annual Work Plan for Headquarters review and approval. This Plan identifies work to be accomplished at tribal and Federal facilities with M&R funds. Repair projects and alterations that are estimated to cost greater than $200,000 are constructed with repair and improvement (R&I)

funds. Projects proposed for R&I are competitively ranked utilizing an objective priority system. The changeover to a personal computer-based deficiencies inventory system will improve our assessment of both the R&I and M&R funds. Headquarters will have access to Area deficiencies system databases and will be able to evaluate deficiency backlogs on an IHS-wide basis. These systems will comprehensively track all M&R and R&I projects — Federal and tribal.

Question. How will funds be allocated under the new system?

Answer. The changeover to a personal computer-based deficiencies inventory system will not change the way funds are allocated for maintenance and repair. Both tribal and Federal facilities are evaluated together using a formula that considers: 1) square footage, 2) type of construction, 3) intensity of use, 4) replacement cost, and 5) percentage of the health program funded by IHS. Approximately 40 percent of this calculated amount is distributed directly to local facilities for daily operations, local repairs, bench stock, and service contracts. The remainder is aggregated into an Area-wide fund to be used for the most urgently needed repair projects in the Area.

SANITATION

Question. The Indian Health Service has responsibility for providing sanitation facilities to Indian families, houses built by the Department of Housing and Urban Development, the Bureau of Indian Affairs, and units constructed by tribes and other entities. What is the estimated backlog of sanitation facilities deficiencies?

Answer. The IHS 10-year plan requested by Congress in the Indian Health Care Amendments of 1988 (Public Law 100-713) identifies an estimated $572 million backlog of economically feasible projects to correct sanitation facilities deficiencies for approximately 98 percent of the Indian population in existing Indian homes and communities. The IHS plan also identifies an additional $1,142 million not considered economically feasible at this time which would be required to provide piped water and piped sewer services and other costly sanitation facilities to the remaining approximately 2 percent of the existing American Indian and Alaska Native population.

Question. IHS was requested to develop a plan to address this backlog. What is the status of this report? How does IHS plan to proceed?

Answer. The report is currently going through the final stages of the formal clearance process. The IHS has identified over 2,200 economically feasible sanitation facility projects, totalling approximately $572 million.

Question. In addition to the annual work IHS does to address the sanitation needs of newly built houses, what is your present capacity in terms of how much additional work could be done each year to begin addressing this backlog?

Answer. The environmental health staff, including engineers, sanitarians, and para-professionals, have a level of needs funded (LNF) of approximately 75 percent. There is sufficient capacity available to do any preliminary engineering associated with the initiation of any plan to reduce the sanitation facility backlog. Continued implementation of additional work in future years would require a redirection of resources.

Question. The budget indicates (p. 150) that the number of environmental health services provided in FY 1989 was slightly over 117,000. These range from food protection to injury prevention to safety to water supply. The 1989 figure is approximately 12 percent less than the services provided in FY 1988 (133,507). What accounts for this decrease?

Answer. The primary reasons for the decrease are increased activities associated with radon surveys, injury prevention project activities, and various other environmental concerns which require large blocks of time that are not currently captured in the services reporting system. These program activities that consume large blocks of time are contrasted to previously reported activities that required little time but still counted as an activity, e.g., bacteriological and chemical water samples, campground surveys, dog bite investigations, etc. Changes to the reporting system are being considered to more accurately reflect the changing priorities of the environmental health program. Once these additional activities are incorporated into the resource requirements, we anticipate the level of need funded will reflect this change in the nature of the environmental health program.

Question. Were new responsibilities added to the workload of the environmental health staff?

Answer. The long-standing IHS emphasis on prevention issues has been heightened by changing environmental laws and regulations. Furthermore, the increased awareness of health risks associated with radon, asbestos, injuries, etc. has significantly influenced the day-to-day activity of our staff.

QUESTIONS SUBMITTED BY SENATOR DENNIS DeCONCINI

URBAN INDIAN HEALTH CARE PROGRAM

Question. The base budget for the Urban Health Program increased from $9,962,000 in FY 89 to $13,049,000 in FY 90. This represents a $3,087,000 increase. How has the additional $3.087 Million been allocated in the current Fiscal Year? Also, please provide the committee with the FY 90 allocation of the total amount $13,049,000. Show the distribution by the 34 individual projects indicating whether the funds are to be used for outreach/referral services, ambulatory health services or special initiative activities like alcoholism, mental health or AIDS education/services.

Answer. The IHS distributed the increased funding reflecting the sequestration as follows:

Activity	Funding Distribution
1. Alcohol/Substance Abuse $2.500,000 less $37,500.	$ 2,247,600
2. Phoenix Prenatal Program addition less sequestration of $4,375	$ 345,650
3. Seattle alcohol addition less sequestration of $3,750.	$ 296,250
4. Flagstaff addition less sequestration of $2,500	$ 197,500
Total	$ 3,087,000

IHS funds the 34 individual urban programs for outreach/referral services and direct health care services as required by legislation requirements of P.L. 100-713, Title V, Sec. 503, Indian Health Care Amendments of 1988. Further, the IHS encourages and supports the 34 urban programs to provide ambulatory health services and special initiative activities for alcohol/substance abuse, mental health, Fetal Alcohol Syndrome, prenatal, AIDS education/prevention services.

See attached summaries of the FY 1989 and FY 1990 distributions:

FY 1990 UHP FUNDING SUMMARY
Post-Sequestration

Rev. 6/5/90

	Base Funding	Alcohol/S.A. Funding	AIDS Funding	Office Totals
ABERDEEN AREA	$382,000	$166,706	$21,083	$569,789
Pierre	$220,000	$97,353	$13,156	$330,509
Omaha	$162,000	$69,353	$7,927	$239,280
ALBUQUERQUE AREA	$360,000	$139,706	$14,841	$514,547
Denver	$215,000	$73,353	$7,526	$295,879
Albuquerque	$145,000	$66,353	$7,315	$218,668
BEMIDJI AREA	$1,740,000	$476,765	$54,678	$2,271,443
Minneapolis	$720,000	$158,353	$22,815	$901,168
Detroit	$226,000	$102,353	$8,256	$336,609
Milwaukee	$476,000	$70,353	$9,673	$556,026
Green Bay	$150,000	$73,353	$6,284	$229,637
Chicago	$168,000	$72,353	$7,650	$248,003
BILLINGS AREA	$596,000	$263,765	$28,984	$888,749
Billings	$170,000	$74,353	$10,052	$254,405
Great Falls	$180,000	$62,353	$5,393	$247,746
Helena	$101,000	$35,353	$4,693	$141,046
Butte	$66,000	$32,353	$4,850	$103,203
Missoula	$79,000	$59,353	$3,996	$142,349
CALIFORNIA AREA	$2,730,000	$578,824	$73,815	$3,382,639
San Diego	$325,000	$44,353	$7,416	$376,769
Santa Barbara	$250,000	$39,353	$4,474	$293,827
Bakersfield	$162,000	$41,353	$5,413	$208,766
Los Angeles	$717,000	$148,353	$21,599	$886,952
San Francisco	$485,000	$123,353	$13,970	$622,323
San Jose	$250,000	$56,353	$6,932	$313,285
Fresno (Clovis)	$220,000	$46,353	$5,523	$271,876
Sacramento	$321,000	$79,353	$8,488	$408,841
NASHVILLE AREA	$316,000	$105,706	$14,112	$435,818
Boston	$158,000	$34,353	$4,451	$196,804
New York	$158,000	$71,353	$9,661	$239,014

NAVAJO AREA	$197,500	$32,353	$6,650	$236,503
Flagstaff	$197,500	$32,353	$6,650	$236,503
OKLAHOMA AREA	$850,000	$139,706	$28,713	$1,018,419
Dallas	$544,000	$101,353	$11,175	$656,528
Wichita	$306,000	$38,353	$4,522	$348,875
Okla. City	$0	$0	$6,508	$6,508
Tulsa	$0	$0	$6,508	$6,508
PHOENIX AREA	$510,000	$259,559	$34,453	$804,012
Reno	$168,000	$73,853	$5,221	$247,074
Phoenix	$160,000	$107,353	$22,958	$290,311
Salt Lake City	$182,000	$78,353	$6,274	$266,627
PORTLAND AREA	$1,937,000	$468,307	$41,180	$2,446,487
Seattle	$1,341,000	$303,601	$20,118	$1,664,719
Portland	$351,000	$67,353	$12,826	$431,179
Spokane	$245,000	$97,353	$8,236	$350,589
TUSCON AREA	$215,000	$87,353	$6,924	$309,277
Tuscon	$215,000	$87,353	$6,924	$309,277
TOTAL DISTRIBUTED:	$9,833,500	$2,718,750	$325,433	$12,877,683
1.25% SEQUESTRATION:	$124,475	$0	$0	$124,475
SUBTOTAL:	$9,957,975	$2,718,750	$325,433	$13,002,158
RETAINED - TRAINING:	$0	$32,000	$0	$32,000
RETAINED - ADMIN.:	$0	$14,000	$0	$14,000
TOTAL APPROPRIATED:	$9,957,975	$2,764,750	$325,433	$13,048,158

Question. The budget justification requests a total of $14,129,000 for the 34 urban projects in Fiscal Year 1991. According to my calculations, this represents an increase of $1,080,000 over the FY 90 appropriated amount of $13,049,000. Please provide your proposed distribution of the total amount requested for FY 91 by project. Again, indicate how much is being proposed for outreach, clinical or special initiative services for each of the 34 projects.

Answer. The IHS anticipates to continue funding the 34 urban projects at FY 90 base levels and will make the necessary medical and other inflationary funding adjustments. Further, the IHS anticipates the total funding will be used for outreach/referral services, direct health care services, special initiative activities as mental health, AIDS, alcohol/substance abuse, prenatal, diabetes, maternal child health, technical assistance and training support etc.

The increase of $1,080,000 consists of $350,000 for AIDS which was funded by a different appropriation in FY 1990; and $730,000 to meet the increased cost of services associated with inflation. The proposed distribution of this increase follows.

FY 1991 PROPOSED FUNDING
IHS URBAN HEALTH PROGRAM

Rev. 6/5/90

	Base Funding	Alcohol/S.A. Funding	AIDS Funding	Office Totals
ABERDEEN AREA	$410,004	$97,117	$13,596	$520,718
Pierre	$236,128	$55,931	$7,830	$299,890
Omaha	$173,876	$41,186	$5,766	$220,828
ALBUQUERQUE AREA	$386,391	$91,524	$12,813	$490,728
Denver	$230,761	$54,660	$7,652	$293,073
Albuquerque	$155,630	$36,864	$5,161	$197,655
BEMIDJI AREA	$1,867,557	$442,366	$61,932	$2,371,855
Minneapolis	$772,782	$183,048	$25,627	$981,457
Detroit	$242,568	$57,457	$8,044	$308,069
Milwaukee	$510,895	$121,015	$16,942	$648,852
Green Bay	$160,996	$38,135	$5,339	$204,470
Chicago	$180,316	$42,711	$5,980	$229,007
BILLINGS AREA	$639,690	$151,523	$21,214	$812,427
Billings	$182,462	$43,220	$6,051	$231,733
Great Falls	$193,195	$45,762	$6,407	$245,364
Helena	$108,404	$25,678	$3,595	$137,677
Butte	$70,838	$16,779	$2,349	$89,966
Missoula	$84,791	$20,084	$2,812	$107,687
CALIFORNIA AREA	$2,932,987	$694,732	$97,261	$3,724,980
San Diego	$349,681	$82,828	$11,596	$444,105
Santa Barbara	$268,327	$63,558	$8,898	$340,783
Bakersfield	$173,876	$41,186	$5,766	$220,828
Los Angeles	$769,562	$182,285	$25,519	$977,366
San Francisco	$522,554	$123,777	$17,329	$663,660
San Jose	$268,327	$63,558	$8,898	$340,783
Fresno (Clovis)	$236,128	$55,931	$7,830	$299,889
Sacramento	$344,532	$81,609	$11,425	$437,566
NASHVILLE AREA	$339,166	$80,338	$11,248	$430,752
Boston	$169,583	$40,169	$5,624	$215,376
New York	$169,583	$40,169	$5,624	$215,376
NAVAJO AREA	$211,978	$50,211	$7,030	$269,219
Flagstaff	$211,978	$50,211	$7,030	$269,219
OKLAHOMA AREA	$910,312	$215,624	$30,187	$1,156,123
Dallas	$581,880	$137,829	$19,296	$739,005
Wichita	$328,432	$77,795	$10,891	$417,118
Okla. City	$0	$0	$0	$0
Tulsa	$0	$0	$0	$0
PHOENIX AREA	$547,387	$129,658	$18,153	$695,198
Reno	$180,316	$42,711	$5,980	$229,007
Phoenix	$171,729	$40,677	$5,695	$218,101
Salt Lake City	$195,342	$46,270	$6,478	$248,090
PORTLAND AREA	$2,078,141	$492,247	$68,914	$2,639,302
Seattle	$1,438,450	$340,724	$47,701	$1,826,875
Portland	$376,731	$89,236	$12,493	$478,460
Spokane	$262,960	$62,287	$8,720	$333,967
TUSCON AREA	$230,761	$54,660	$7,652	$293,073
Tuscon	$230,761	$54,660	$7,652	$293,073
TOTAL DISTRIBUTED:	$10,554,374	$2,500,000	$350,000	$13,404,375
1.25% SEQUESTRATION:	$133,601			$133,601
UHP BASE FUNDING:	$10,687,975			
HDQTRS. RESERVE AND POSSIBLE SEQUES.:				$591,024
FY 1991 UHP REQUEST:				$14,129,000

Question. Last year Congress provided an additional $350,000 for a prenatal clinic in Phoenix, Arizona and $200,000 for the start-up of a new urban clinic in Flagstaff, Arizona. Have these amounts been included as recurring base budgets for these two projects with the $14,129,000 requested by the IHS budget for FY 91?

Answer. Yes, this amount has been included as recurring base budgets for these two projects.

PRIVATE THIRD PARTY PAYMENT COLLECTIONS

Question. What is the total amount of private third party payments collected to date in the current fiscal year by the IHS within each Area by Service Units?

Answer. The total amount of private third party payments collected by the IHS within each Area by Service Unit is provided on the following Table A, entitled "IHS Private Third Party Collections as of March 31, 1990."

INDIAN HEALTH SERVICE
Private Insurance Billed/Collected by Area by Service Unit
As of March 31, 1990

Name of Facility	$Amount Billed	$Amount Collected
ALL IHS AREAS - TOTAL	2,533,587	731,069
ABERDEEN AREA - TOTAL	39,356	18,214
Belcourt, ND	0	0
Eagle Butte, SD	3,880	1,315
Fort Yates, ND	26	8
Pine Ridge, SD	0	1,509
Rapid City, SD	8,027	5,483
Rosebud, SD	0	330
Sisseton, SD	15,670	7,843
Wagner, SD	615	242
Winnebago, NE	731	288
Fort Thompson	4,918	836
Fort Totten	0	0
Lower Brule	5,489	360
ALASKA AREA - TOTAL	646,419	244,125
Anchorage, AK	621,014	235,805
Barrow, AK	15,993	3,293
Bethel, AK	29,201	4,871
Mt Edgecumbe, AK	9,412	156
ALBUQ AREA - TOTAL	161,783	30,908
Acoma-Laguna, NM	0	190
Albuquerque, NM	40,217	6,291
Mescalero, NM	665	109
Santa Fe, NM	116,326	23,543
Zuni, NM	0	0
So Colo Ute SU, CO	4,575	776

BEMIDJI AREA - TOTAL	15,363	5,282
Cass Lake, MN	0	0
Red Lake, MN	3,527	1,519
White Earth	11,836	3,763
BILLINGS AREA - TOTAL	22,552	4,871
Browning, MT	4,616	1,211
Crow Agency, MT	4,885	994
Harlem, MT	4,496	1,728
Northern Cheyenne	2,587	809
Rocky Boys	4,535	79
Wind River	8,088	50
NAVAJO AREA - TOTAL	783,680	206,427
Chile, AZ	174,014	23,885
Crownpoint	17,384	417
Fort Defiance, AZ	164,921	6,619
Gallup, NM	236,878	97,715
Shiprock, NM	30,846	3,167
Tuba City, AZ	33,144	19,026
Kayenta, AZ	89,633	47,716
Winslow, AZ	36,860	7,882
OKLAHOMA AREA - TOTAL	600,877	150,739
Ada, OK	5,638	152
Claremore, OK	97,612	22,603
Miami Ind HC	25,179	9,050
Clinton, OK	17,261	2,685
Lawton, OK	75,673	14,128
Anadarko Ind HC	5,514	694
Tahlequah, OK	245,860	77,904
Choctaw Nation Ind Hosp	2,845	0
Haskell Ind HC	1,699	0
Holton Ind HC	2,962	487
Pawhuska Ind HC	33,281	5,549
Pawnee Ind HC	13,466	1,753
White Eagle Ind HC	30,150	7,030
Shawnee Ind HC	23,547	2,809
Wewoka Ind HC	20,190	5,201
PHOENIX AREA - TOTAL	64,289	9,382
Fort Yuma, CA	0	0
Keams Canyon, AZ	465	0
Owyhee, NV	12,746	141
Parker, AZ	0	0
Phoenix, AZ	0	0
Sacaton, AZ	0	0
San Carlos, AZ	0	0
Whiteriver, AZ	3,577	20
Schurz	28,645	5,666
U & O	18,856	3,555

TUCSON AREA - TOTAL	1,600	0
Sells, AZ	1,600	0
NASHVILLE AREA - TOTAL	255,058	61,084
Cherokee, NC	255,058	61,084

Question. When you developed the projected collection of $32 million for FY 91, did you assume that all Areas would collect equal amounts or are you assuming that disproportionate collections among the 11 Areas will occur? Can the IHS project by Area how much of the $32 million in private third party collections will be collected in FY-1991?

Answer. The IHS is currently projecting $40 million in private third party collections for FY 91. Disproportionate collections will occur primarily because of the demographic differences among the areas. The IHS currently projects that the $40 million will be collected by area as follows:

FY 1991 Projected Private Third Party Collections by Area

Name of IHS Area	FY-1991 Projected Collections
ABERDEEN AREA	900,000
BEMIDJI AREA	1,200,000
ALBUQUERQUE AREA	2,700,000
ALASKA AREA	6,250,000
BILLINGS AREA	1,800,000
NAVAJO AREA	4,200,000
OKLAHOMA AREA	12,300,000
PHOENIX AREA	6,200,000
PORTLAND AREA	2,600,000
TUCSON AREA	650,000
NASHVILLE AREA	1,200,000
ALL IHS AREAS - TOTAL	40,000,000

Question. Incentives to doctors, who complete the detailed paperwork, are critical if substantial amounts are to be successfully collected. What kind of incentives will IHS Headquarters office to the IHS Areas and Service Units to make private third party billings and collection?

Answer. The amount of paperwork to be completed by the physician will not present an impediment to our collection effort. The incentive to motivate physicians will be an opportunity to meet some of their identified high priority health care needs, which were not within the proposed funded level, that will be funded by reimbursements. These needs were developed in conjunction with IHS Area and clinical leadership and with Tribal consultation and participation. All of the expenditures will go to provide or improve patient care.

Question. What incentive is there to a Service Unit which has greater potential for Private third party collections to do the work and collect the funds, if most of the funds they collect go elsewhere in the system? How much of the $32 million will be returned directly to the Service Units? Please show the amount expected to be returned by Service Unit or Area if the expenditure of these funds will be for an Area level activity?

Answer. The funds will be used for high priority needs as outlined in the budget justifications which will result in improved patient care at the Service Units. To the greatest extent these funds will be used right at the Service Unit level. Once the Service Unit providers understand how their collective efforts will bear upon improving health care to Indian people they will be motivated to put forth their best efforts, even though all of the collections may not be returned to their Service Unit. Though private insurance collections will be spent to support the Service Unit programs, for certain overall national initiatives, efficient management dictates either central expenditures or Area-wide expenditures. An example would be the procurement of computer equipment and automated billing system software which must be purchased centrally. At this time we cannot show the exact amounts to be returned to each Service Unit because we do not know what the specific or exact requirements by facility will be. For instance, at this time we do not know where the specific health professionals receiving loan repayments will be located. Similarly, final determination on specific computer equipment, automated billing system software, and medical equipment requirements by facility have not been made at this time. However, it is our plan to utilize the funds to support health care activities at the Service Unit/facility level.

Question. Is there any reason why the funds collected could not be returned to the Service Unit which has collected the money if they were allowed to expend these monies in a manner consistent with any initiative proposal by Headquarters?

Answer. It is our intent to return most of the funds to the Service Unit which has collected them, to be expended in a manner consistent with the initiatives identified. Certain important initiatives, however, will require central coordination with expenditures to be made in a way that will benefit all Service Units. This may require expenditure of funds at a Service Unit at which the actual collection of the funds did not occur. Some examples include the loan repayment program which is needed to recruit health professionals service-wide and the IHS-wide computer initiative; both of which will directly impact upon health care to patient.

Question. When was the last time the IHS revised the methodology for reviewing and ranking requests for new or replacement hospitals and clinics? Under IHS policy, how often is this or any facility ranking methodology to be revised so all tribes can have the opportunity to compete on equal footing?

Answer. The Congress has directed the IHS to submit priority lists each year identifying the 10 highest priority inpatient facility projects and 10 highest priority outpatient projects. The IHS uses these lists to request funding for replacement or renovation of existing facilities and construction of new facilities. As projects on these lists are funded, they are removed from the lists. When additional projects are required to complete the IHS health facility priority lists, the IHS applies its Health Facility Construction Priority System to review and rank proposed construction projects. Proposed projects that are rated high during this application and approved for construction are added to the priority lists to satisfy the requirement for 10 inpatient and 10 outpatient facility construction projects. The Health Facility Construction Priority System is a three phase process that permits the IHS to consider all proposed projects initially and then focus more closely on the higher-rated projects during later phases.

Currently, the IHS is reevaluating its Health Facility Construction Priority System methodology to continue to ensure that all tribes have access to health care services. The IHS does not revise this methodology on a regular basis because it is based on policy and planning assumptions that remain fairly constant. However, during the most recent application of Phase I of the approved methodology, suggestions of merit for modifying it were presented. Because these suggestions by tribes and IHS Area Offices were relevant, the IHS interrupted the application and initiated a further review and reevaluation of the methodology to ensure that it accurately identified and assessed construction needs.

When we have completed this reevaluation, we expect that the revised methodology will reflect IHS policy and ensure that all tribal and IHS construction proposals are treated equally.

Question. How does the current methodology deal with the fact that some Native American populations have immediate access to community hospitals while other reservation populations have no such alternative facility within hundreds of miles of their homes?

Answer. Health facilities construction is not the only mechanism by which the IHS assures that all American Indians and Alaskan Natives have access to health care services. The Health Facilities Construction Priority System was designed to determine the locations with the greatest need for construction so that IHS could target its resources in locations where those resources would provide services to a greater number of American Indians and Alaskan Natives. However, IHS also obtains services through contracts with private sector providers. We believe the most reasonable way of assuring that the IHS provides comprehensive health care services to all American Indians and Alaskan Natives is to provide direct care services at facilities where it is most feasible and augment these services with private sector services as necessary.

This method of providing services assures that most Native American populations have immediate access to health care services either through the IHS directly or through contract health care providers. However, small populations in isolated locations may not have immediate access to health care services (especially inpatient services). In Alaska, for example, some villages are hundreds of miles from a hospital. Unfortunately, where population densities are so small, it is less feasible for the IHS to provide direct care. In some cases, these populations may be remote from other health care providers as well. Even in these situations the IHS usually provides ambulatory health care services directly at least one or two days per week.

When the reevaluation of the Health Facilities Construction Priority System is complete, the IHS expects that the methodology will include a factor that increases scoring for those proposed projects that may be in isolated locations or that may be located where adequate facilities are not available. This factor will permit consideration of proposed projects where there is a need for health care services but where the feasibility is marginal.

To assure that all American Indians and Alaskan Natives have access to health care services either directly or from contract providers, the each IHS Area office has been asked to develop Area-Wide Health Facility Master Plans. These plans, first developed in 1988, describe how the IHS is currently providing services to American Indians and Alaskan Natives and how it plans to provide services in the future. These are reviewed during each application of the IHS Health Facilities Construction Priority System to assure that all proposals considered are within the scope of particular area office plans. The Master Plans are not updated regularly. However, we are in the process of updating now to reflect the most recent IHS policy regarding health facility planning and construction.

Question. In Fiscal Year 1989 when the severe shortfall in contract health care occurred, the delivery of Contract Health Services (CHS) to Arizona tribal members was especially hit hard because of a federal court ruling. I took steps to include additional funds in the FY 1990 CHS account for the MN/MI costs in Arizona.

How was the $5 million earmarked for the Medically Needy/Medically Indigent (MN/MI) costs in Arizona distributed? Provide a chart which shows how the $5 million was allocated, and the annual CHS allocation for these same Areas from FY 1987 through FY 1990. For FY 1990, keep the MN/MI allocation separate from the annual CHS cost-related allocation for each Indian Health Service (IHS) Area.

Answer. An additional $12 million was appropriated to the IHS in FY 1990 to address this problem. Approximately $3 million dollars of the CHS extra $12 million dollar shortfall appropriation in FY 1990, was directly set-aside for allocation to the Arizona Areas (Tucson, Phoenix, Navajo) affected by the Court Ruling. The $3 million dollar set-aside was based upon actual MN/MI work load and cost experience. In order to treat all Areas equitably, the remaining $9 million dollars was distributed among the 12 IHS Areas, including the Tucson, Phoenix, and Navajo Area using the Resource Allocation Methodology (RAM). The total combined CHS and MN/MI set-aside allocations to the IHS Areas affected by the Court Ruling accumulated to $5,103,300. The following chart illustrates the annual CHS allocations and MN/MI set-aside by the three IHS Areas for FY 1987 through FY 1990.

TABLE I

RECURRING CHS BUDGET BY FISCAL YEAR

IHS AREA	1987 CHS BUDGET	1988 CHS BUDGET	1989 CHS BUDGET	1990 SEQUESTERED BUDGET		
				BUDGET 1/	CHS MN/MI	CHS RAM 2/
Navajo	$18,667,000	$19,893,000	$21,607,400	$21,337,300	$661,600	$1,342,900
Phoenix	14,710,000	15,382,000	16,848,800	$16,638,100	2,114,200	$769,300
Tucson	4,456,000	4,856,000	5,194,400	$5,129,500	$186,700	$28,600
TOTAL:	$37,833,000	$40,131,000	$43,650,600	$43,104,900	$2,962,500	$2,140,800

1/Although Congress appropriated base inflationary increases, the net result of the FY 1990 sequestration, decreased all IHS Area's CHS Base allowances for FY 1990.

2/Using the Resource Allocation Methodology (RAM),the Tucson, Phoenix, and Navajo Area received this amount.

Question. How are the actual costs for MN/MI services comparing with the estimated $5.2 million for FY 1990? Provide a year-to-date costs related to MN/MI by IHS Area.

Answer. The financial year-to-date effects of the Court Ruling on MN/MI services in the three IHS Areas are listed below. The actual costs represents the amount the three IHS Areas have paid in FY 1990 as a result of the Court Ruling. The actual cost are not available for the Navajo Area.

IHS Area	Actual Cost for period 10/1-3/30/90
Navajo 1/	$330,800
Phoenix	1,021,741
Tucson	315,000
TOTAL	$1,667,541

1/ The costs are estimated, based upon previous workload data and charges from FY 1989.

Question. The FY 1991 CHS budget has a $13.147 million increase over the FY 1990 to offset increased costs, and that $12.513 million will be used to purchase CHS. Does the total request of $250,794,000 include the $5 million provided by Congress in FY 1990 for the Arizona MN/MI costs? How much of the $12.513 million increase will be used to cover any increase in MN/MI costs in FY 1991 in Arizona? Provide a proposed amount which the three Arizona Areas will each get out of the regular CHS Budget for their non-MN/MI costs for contract health care in FY 1991? Include the Catastrophic Health Emergency Fund allocation if those amounts are distributed by Area.

Answer. Yes, the total FY 1991 CHS budget request of $250,794,000 includes the $5 million which becomes part of the ongoing base funding for the three IHS Area's affected by Arizona MN/MI costs. The $12.513 million represents inflationary cost increases and will be allocated to all Areas according to IHS' resource allocation policy. There is no restriction on the focus (e.g. non-MN/MI costs vs. MN/MI costs...) of FY 1991 CHS resources. IHS adjusts its resource allocation process annually by utilizing current data. The distribution to the Arizona Areas will be approximately $3 million. (See Table II).

The Catastrophic Health Emergency Funds (CHEF) are made available to the IHS' service units or eligible tribal CHS programs, through the Area, for their individual catastrophic cases on an occurrence basis. There is no recurring base for this resource.

The following table shows the projected amount each IHS Area affected by the Court Decision should receive in FY 1991. The inflationary allowances are not included in Table II, and will be determined during the budget formulation process of the IHS.

TABLE II

PROJECTED CHS MN/MI BUDGET FOR THE NAVAJO, PHOENIX AND TUCSON AREAS
FISCAL YEAR 1991

IHS AREA	CHS MN/MI	CHS RAM 1/	TOTAL
Navajo	$661,600	$1,342,900	$2,004,500
Phoenix	2,114,200	$769,300	$2,883,500
Tucson	$186,700	$28,600	$215,300
TOTAL:	$2,962,500	$2,140,800	$5,103,300

1/Using the Resource Allocation Methodology (RAM), the Tucson, Phoenix, and Navajo Area are expected to receive this amount.

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

GENERAL BUDGET

Question. The budget for IHS has more than doubled since FY 1981 ($591,000,000 in FY 81; $1,278,000,000 in FY 91). How would you assess your delivery of services with such a large budget increase?

Answer. The IHS has indeed enjoyed significant growth in the availability of resources to address the health problems of American Indians and Alaska Natives. The growth has approximated annual funding increases of 5.3 percent. This must be viewed in context. During this same time period (FY 81-91) the cost of private health services in the United States has increased an average of 10 percent annually. The IHS has had to compete for staff and purchase goods and services in an environment that has grown at almost twice the pace allowed for IHS. It has been difficult to continue to provide state-of-the-art comprehensive services.

There has also been a rapid growth in the American Indian and Alaska Native population demanding services from IHS. The IHS service population has grown from 828,000 in FY 1981 to 1,105,000 in FY 1991 due to birth rate, Federal recognition of new tribes, and membership expansion of existing tribes. This is an average population growth of 2.66 percent annually.

Despite these difficulties, the IHS has provided an increasing variety and amount of services. Outpatient visits have increased from 4 million to 5 million annually. Hospital admissions have remained at the same level. Dental visits have increased from 1.8 million to 2.1 million. Alcoholism services have increased; mental health services have increased; community health representative services have increased; nutrition services have increased, etc.

However, there remain deferred services requested under contract health programs. IHS has not funded adolescent and child counseling services; teen centers; wellness activities; sanitation and water facilities; solid waste management; specialized disabilities services; and a variety of other medical and public health activities.

In summary, IHS has received significant program increases. Increases in many basic services have occurred, however some basic needs remain unmet.

Question. Is the health of Indians better?

Answer. The answer is unequivocally yes. The figures for major mortality indicators among American Indians and Alaska Natives have shown steady declines over the last decade. This includes infant mortality (down 33 percent), accident mortality (down 25 percent), alcohol related deaths (down 41 percent), and Diabetes (down 10 percent), tuberculosis (down 41 percent), and gastrointestinal disease death rates (down 38 percent). The exceptions to these trends includes deaths due to cancers and cardiovascular disease which are still well below death rates in the U.S. population, but increasing slowly. Little progress has been made in addressing social and behavioral illnesses, such as suicides, homicides, frequency of abusive and violent behavior, and other behavioral issues.

MANAGEMENT EFFICIENCY

Question. In FY 1989, the IHS initiated a broad based management improvement system called the "Quality Management Initiative" (QMI). This system was launched as a result of increasing demands on IHS and to address specific concerns of HHS, Congress and other external authorities (pg. 55).

It is my understanding that the QMI focuses on strengthening IHS administration and management by making immediate corrections where necessary, encouraging innovation in management systems and instilling in all IHS employees a commitment to professionalism, accountability and continuous improvement. This effort seems to be admirable but also very basic to most organizations, large or small.

What type of management system was IHS operating under prior to the QMI?

Answer. The Indian Health Service (IHS) as an organization, as well as most of it's staff, were buffeted by a series of events over the course of last spring and summer. Morale was waning rapidly and entrenchment mentality was setting in. The IHS could not long tolerate the destructive potential of those events and consequences. Dr. Rhoades had to act and act in a highly visible way. The QMI name and the broad based initiatives it symbolized, became the cornerstone of efforts to turn the corner - to show IHS staff that it had the will to confront problems and the commitment to make changes where appropriate. Delegations of authority had to be clarified and articulated clearly, instructions to managers had to be made more precise, and managers had to be held personally responsible for their program's performance.

Answer. The Indian Health Service (IHS) is aware that the Nez Perce Tribe in Idaho is considering proposing a creative method of financing a new health care facility. To date, however, the tribe has not submitted a written proposal to IHS for evaluation, and the

Question. Can you quantify the success of this effort?

Answer. Various efforts targeted at specific problems are well underway (Medicare and Medicaid Collections, Management of Contract Health Services, Relations with External Authorities). I have required that these projects not just make recommendations for improvement, but to actually result in improved operations with tangible outcomes. I am insisting that the projects have a "RESULTS" focus. Each of these projects has been given the following criteria for success:

- o Actions must be acceptable to management;
- o Projects must measure performance so improvements can be tracked (before - after measures);
- o Targeted change must have high payoff potential; and
- o Customer relations must be improved.

For example, one of the projects aimed at improving the identification of alternate resource eligibility in IHS patient registration files may raise collections by up to 15 percent.

Some outcomes will be seen in 1990. For example, the Public Health Service Central Supply Operation (Perry Point) is scheduled to be transferred to IHS by July 1990.

LEASE-PURCHASE OPTIONS

Question. Over the past few years, various tribes have forwarded proposals to IHS and the Congress regarding the possibility of securing non-Federal funding for some IHS facilities. As a result of these proposals, the Senate report requested that the IHS perform a feasibility study to provide costs, information and analysis about alternative funding methods.

In addition, specific analyses are being performed for the Alaska Native Medical Center and the clinic on the Warm Springs Reservation (pg. 44).

The justification indicates that IHS is in the process of soliciting proposals to do a feasibility study for the Alaska proposal, and a contract has been awarded for a feasibility study on the Warm Springs proposal.

Has a contract been awarded for the feasibility study for the Alaska proposal?

Answer. A contract for the economic analysis was awarded in November 1989. The final report was submitted to the Congress on April 20.

Question. Is there a preliminary report back from the Warm Springs proposal?

Answer. The Indian Health Service completed its evaluation of the Warm Springs proposal for alternative health facility construction financing, and should be submitting its report on the feasibility of the proposed approach to the Congress in May.

Question. Are you familiar with an alternative financing proposal from the Nez Perce Tribe?

Answer. The Indian Health Service (IHS) is aware that the Nez Perce Tribe in Idaho is considering proposing a creative method of financing a new health care facility. To date, however, the tribe has not submitted a written proposal to IHS for evaluation, and the IHS has had no direct involvement in this proposed project.

Question. The report language directed a broader analysis of alternative financing beyond the two sites. How are you undertaking this expanded analysis?

Answer. The Indian Health Service has completed an evaluation of all known tribal proposals to construct health facilities using alternative financing, and has prepared a report of its findings for submission to the Congress. The report discusses the status of known proposals, describes the potential benefits and costs for joint-venture projects, and presents some preliminary guidelines for evaluating proposals of this nature. The report should be forwarded to the Congress in May.

BUDGET STRUCTURE

Question. You have again proposed to split the IHS program between a Federal health care delivery system administered by Federal employees, and a tribal health care delivery system administered by tribes and tribal groups (pg. 54). The justification states that separate requests for the Tribal and Federal Indian Health Administration are intended to promote the Tribal Health Administration and reflect continued support for locating program administration at the local level. The proposal is designed to help IHS entrust 75 percent of Indian Health Hospitals and Clinics to the Tribal Health Administration by FY 1998.

It is my understanding that 30 percent of the hospitals are entrusted to the Tribal Health Administration. Is that still accurate?

Answer. The Tribal Health Administration includes approximately 30 percent of the resources appropriated for the Hospitals and Clinics sub-sub activity. The tribes operate 7 hospitals or 14 percent of the 50 IHS hospitals.

The proposal is to enhance self-determination options for tribes and tribal organizations.

Question. What is the percentage of clinics?

Answer. The tribes operate 73 or approximately 52 percent of the 139 IHS health centers.

Question. If this proposal has been rejected before, why do you think it will be adopted now? Has it changed?

Answer. The Administration still believes that displaying the IHS' budget in this manner reflects its commitment to Self-Determination.

HEALTH PROGRAM ADMINISTRATION

Question. One of the major barriers to health program administration is the lack of a sufficient number of Native American health professionals, health program administrators, and health professionals on the reservation (pg.55).

The FY 91 budget proposes to correct this problem through the expansion of the Indian Health Manpower program to the full statutory authorization of $12.6 million ($3.1 million over FY90), which will fund an additional 177 health professionals.

If the entire $3.1 million increase goes for scholarships, the average scholarship will be nearly $17,000. Is that accurate?

Answer. The average cost for an IHS scholarship during FY 1989 was approximately $15,600. This average cost figure was used by the IHS to provide an estimate to Congress on the number of scholarships appropriated funds will supply. The $3.1 million increase consists of two figures. The first amount of $299,000 is the estimated increase for inflation to maintain the current level of scholarships. The second figure of $2,761,000 is the program increase for additional scholarships. The calculation of an additional 177 scholarship awards is based on the $2,761,000 figure, not the $3.1 million total increase.

Question. How much overhead is involved with these scholarships?

Answer. The IHS supports the administration of the Scholarship program through the Direct Operations budget. No funds appropriated for scholarship awards are used by the IHS to support program administration. The current administrative costs and overhead out of the IHS Direct Operations budget for FY 1989 total approximately $700,000 per year for the IHS Scholarship Program. This total also includes the Scholarship Programs administrative costs to carry out Sections 101 and 103 of Public Law (P.L.) 94-437, as amended by P.L. 100-713.

HEADQUARTERS RELOCATION

Question. The FY 1990 justification indicates that IHS will undertake a study of the possible relocation of IHS Headquarters. Testimony at last year's hearing indicated that the study would be complete during the last quarter of FY 1989. The FY 1991 justification, however, indicates that the report is expected to be completed and submitted during the first part of FY 1990. What is the status of this report?

Answer. The report is being finalized and will be transmitted to the Congress soon. The comprehensiveness of the report and the technical analyses of location and functional costs and benefits required a much greater amount of time than initially anticipated. The report concludes that the Director, IHS, and staff necessary to support his role should remain located in the Washington, D.C., area. It also concludes that IHS would benefit from relocating other Headquarters staff closer to the field programs and tribes that they support. This requires further analysis and consideration of organizational changes.

INDIAN SELF-DETERMINATION AND EDUCATION ASSISTANCE ACT

Question. The justification states that there are several barriers inhibiting the expansion of tribal contracting under the Indian Self-Determination and Education Assistance Act (P.L. 93-638). One of these barriers is the perception that indirect contract costs are under funded (pg. 66). This discourages tribes and tribal organizations from assuming responsibility for health services delivery. The FY 1991 budget attempts to correct this through full funding of the estimated $78 million tribal indirect contract costs and $23 million in contract support costs. If costs aren't fully funded, how can you call this a perception problem?

Answer. In FY 1990 IHS is essentially eliminating the historical indirect cost shortfall utilizing the $23 million increase contained in the FY 1990 appropriation. However, P.L. 100-472 establishes a new requirement for the funding of contract support costs which encompasses certain direct costs for which appropriations have not been previously received. With the appropriation of the $22.6 million identified in the FY 1991 budget request as contract support, IHS estimates that tribal contractors will be fully funded in the area of all contract support costs, including indirect costs.

Question. What is the percentage of funding for indirect costs?

Answer. In FY 1990 indirect costs under P.L. 93-638 contracts average 18.1 percent of total funding of these contracts.

Question. The FY91 budget also proposes a 60 percent increase ($2.5 million in FY90; $4.1 million in FY91) for Tribal Health Administration management training (pg. 66). These funds will be used for technical and management training support for existing and potential Indian contractors.

The justification indicates the intent of these funds is to create a "center-of-excellence" for assisting other tribes with health programs administration. Can you elaborate on the "center-of-excellence"?

Answer. The "center-of-excellence" is a concept to provide potential tribal contractors with additional technical assistance resources through the transfer of objective information from tribes currently operating their own health programs. This concept provides for a "peer resource" regarding specific issues/topics concerning Self-determination contracting that could be beneficial to tribes by fostering an exchange of information and ideas. The implementation of this concept could be accomplished by tribes through the Tribal Management Grants program.

Some tribes have developed a high degree of sophistication and expertise in health administration. These centers of excellence' are a valuable resource for assisting other tribes, both those considering assuming a new contract and those already operating a contract but requiring technical assistance.

Currently, IHS provides technical, managerial or administrative assistance to tribes. However, tribes can and should be able to obtain technical advice and assistance from a source of their own choice, whether IHS, a private provider, or another tribal health organization.

Within the 'center of excellence' concept, IHS' Tribal Management Grants program could provide grants to tribes with a high degree of sophistication and expertise in health administration to provide advice and technical assistance to other tribes and tribal organizations as requested. Additionally, tribes receiving a grant could purchase technical assistance from another tribe, from IHS or from a private provider of their choice.

Question. How many people are necessary for it to be effective?

Answer. The coordination of the "center-of-excellence" concept could be addressed through the identification of tribes which have programs that are well developed in the different aspects of tribal health administration management. This will require no additional FTEs.

Question. Where is the problem it will be addressing?

Answer. The 'problem' is one of barriers to self-determination identified earlier: shortage of tribal expertise in health program administration. Between tribes, capacity to administer a health services delivery system varies greatly. The 'center of excellence' concept seeks to utilize the existing expertise of those tribes with significant health administration experience to assist other tribes and tribal organizations desiring technical or management assistance. The "center-of-excellence" would also provide information on the pros and cons of self-determination contracting to tribal councils and tribal health boards which do not have experience in the administration of health care delivery systems.

Question. Where are the capabilities of tribes the weakest and how does this program address those needs?

Answer. The capabilities of the tribes appear to be weakest in the areas of:

1) Establishing roles and responsibilities of health care directors and governing boards for health system delivery administration;
2) Establishing financial management systems to ensure accountability;
3) Personnel systems development;
4) Establishment of evaluation components; and
5) Human resources development.

The tribal management grant program at a cost of $1,455,767 is currently funding 21 grants for the development of tribal health management infrastructures, 3 grants for human resources development, and 2 grants for evaluation studies.

~~PHYSICIAN~~ CERTIFICATION

Question. The number of licensed physicians in the IHS system is roughly 70 percent, roughly the same percentage as the past three years. Over 95 percent are board certified or specially trained in a medical specialty (pg. 71).

Why has the percentage of licensed physicians held steady for the past few years?

Answer. There is an error in the 1991 budget justification. Approximately 98 percent of IHS physicians are licensed, and 70 percent are board certified or board eligible. Of the small number of unlicensed physicians, almost one-half are in residency training and are not required by the state in which they are training to be licensed. The percentage of board certified or eligible physicians has held steady for the past few years and will probably remain so. The IHS has many locations, particularly health centers where physicians in general practice are needed to provide medical care. These physicians have completed medical school and at least one year of an approved residency, are licensed by a state medical/osteopathic board, and have had their credentials reviewed and been granted specific medical staff privileges by the facility governing board. These physicians in general practice are not eligible for certification by a medical specialty board, as they are not specialists. Most specialty boards require three to five years of residency training to be eligible to take a certifying examination. Physicians with this amount of training are not needed in certain locations, where the need is for the generalist.

An additional reason is that most physicians join the Indian Health Service at the completion of residency training. However, certain specialty boards, particularly in obstetrics and gynecology and the surgical specialties, require at least two years of clinical practice after completion of residency before one is eligible to take the specialty board examination. Therefore, these physicians are technically not board-eligible and cannot become board certified during this time period.

Question. What is being done to address this?

Answer. Based on the answer to the previous question, there is no problem which needs to be addressed.

Question. How does this compare with the national average?

Answer. The percentage of American physicians who are board certified is approximately 55 percent, and the percentage of those who are fully trained in a specialty would be higher. These statistics are not readily available. Further, these overall statistics are skewed by the fact that there is a significantly higher proportion of board certified specialists congregated in urban areas, contrasted to the primarily rural, isolated areas served by IHS.

HOSPITAL ACCREDITATION

Question. The justification indicates that IHS has attained an unprecedented Joint Commission on Accreditation of Healthcare

Organizations accreditation for 41 of the 43 hospitals and all 7 tribally operated hospitals. The IHS indicates that this is far above the national average for comparable facilities. To what do you attribute this success?

Answer. The success for the attainment of the number of accredited facilities is due to the commitment of IHS staff and resources to put forth the necessary effort to meet the standards required to become Joint Commission Accredited. These commitments require the support of IHS management at all levels. The attainment of accreditation is an acknowledgment of the hospital's compliance with the applicable standards of the Joint Commission which are representative of the standards of health care delivery throughout the United States. It is a yardstick that states that IHS hospitals meet national standards and render care that is of high quality.

Question. What is the national average?

Answer. Approximately 84 percent of all general hospitals are accredited.

MENTAL HEALTH

Question. A draft national mental health plan has been prepared which describes the current status of the Mental Health Program for American Indian and Alaska Natives and makes recommendations for improvement. What is the status of the plan? Is it final?

Answer. The draft National Native American Mental Health Plan is in the process of being reviewed by the Department. While the plan is in final form, it will remain flexible and will be updated and changed as appropriate.

Question. Does it make specific recommendations?

Answer. The draft National Native American Mental Health Plan makes general recommendations on services, staffing levels, training, research, quality assurance and other issues. Discussion of specific action plans for implementation of these recommendations will be initiated after the national Mental Health Program conference in July 1990. Planning will continue in follow-up meetings with IHS Mental Health Branch Chiefs and tribal representatives.

Question. If so, what are they and how is IHS dealing with these recommendations?

Answer. Once the plan has been approved by the Department, we will begin work to formulate specific action plans for local implementation of the Plan's recommendations.

CONTRACT CARE

Question. In FY89, the IHS expanded the services of the Fiscal Intermediary (FI). The purpose of the FI is:

1. to process and make payments on dental claims for most of the IHS areas;
2. to review the claims for appropriateness of services, abuse, fraud and waste; and
3. to prepare a "Standard Set of Reports" for IHS management.

An evaluation of the Fiscal Intermediary program was conducted in FY 89. The conclusion of the evaluation was that the IHS has increased its purchasing power substantially over the past three years. Do you agree with the study of the program?

Answer. Yes, we believe that substantial savings can be attributed to the FI's application of the IHS payment policy.

Question. Has there been documentation with that analysis?

Answer. There is substantial documentation of IHS' increased purchasing power as a result of the payment policy and by having the FI process payments. For example, the "Contract Pricing Comparison Report" produced by the FI for the IHS, compares the amount IHS paid (based upon payment policy) to the amount the provider billed. The difference indicates substantial savings resulting in increased purchasing power.

FORT HALL, IDAHO AND KYLE, SOUTH DAKOTA

Question. An additional $1.1 million has been requested for 30 positions to staff the Fort Hall, Idaho, and Kyle, South Dakota replacement centers (pg. 107). These funds will allow those facilities to be staffed at 84 percent of the identified staffing requirements. How does this percentage compare with other IHS centers?

Answer. The FY 1992 IHS Budget Request includes funds to staff the Fort Hall and Kyle health centers at 84 percent. Most IHS centers are staffed at a level of approximately 74 percent.

Question. What is your plan to move to 100 percent?

Answer. The IHS intends to request a 100 percent staffing level in the next budget cycle for the Fort Hall and Kyle health centers.

Question. If additional funds were provided to fully staff these facilities, how much would be necessary?

Answer. The following additional funds would be needed to staff the Fort Hall, Idaho and Kyle, South Dakota replacement health centers at 100 percent of the identified staffing requirements.

	Fort Hall		Kyle	
	FTE	Amount	FTE	Amount
Hospital and Health Center	10	$380,000	5	$186,000
Dental Health	2	69,000	1	62,000
Mental Health	1	52,000	-	---
Public Health Nursing	1	52,000	1	68,000
Total	14	$553,000	7	$316,000

DENTAL CARE

Question. In FY89, the IHS Dental Program conducted an in-depth program review in the Albuquerque Area. Program reviews for the Billings and Portland Areas had to be postponed due to staff turnover in the Headquarters dental program (pg. 114). Have you rescheduled the Billings and Portland program reviews?

Answer. Yes, the Billings Area dental program review was conducted March 14-17, 1990 and the Portland review is scheduled for the 4th quarter of FY 1990.

Question. In FY89, the IHS Dental Program conducted an in-depth program review in the Albuquerque Area. Program reviews for the Billings and Portland Areas had to be postponed due to staff turnover in the Headquarters dental program (pg. 114). What did the Albuquerque review indicate?

Answer. The Albuquerque Area has recently experienced budget shortfalls which have resulted in constraints on the dental program. This is reflected by the extended lapse of 2 dental officer positions and delays in replacement of deteriorated equipment. The review also revealed difficulties within the area in compliance with IHS fluoridation policy.

PRIVATE THIRD PARTY COLLECTIONS

Question. In the Indian Health Care Amendments of 1988 (P.L. 100-713), the Indian Health Service (IHS) was given the authority to bill and collect from private insurers for services that are provided to eligible Indian patients treated in IHS facilities. This new authority was implemented during the last half of FY 89 (pg. 133).

As authorized, the IHS is proposing to use these funds to augment those services that provide health services to Indians. Of the $40 million anticipated in FY 91, $3.5 million will be used to support the system requirements to implement the billing process, and $2.0 million will be used to provide staffing support at each of the facilities in IHS that are submitting claims for repayment.

The justification indicates that $8 million is expected to be collected in FY 90. What do you anticipate will be the average annual collections?

Answer. In FY 1991 we anticipate that the collections will be at least $40 million.

Question. How confident are you that the collections will be $40 million in FY 91?

Answer. The IHS has gained additional experience in the identification of insurance eligibles and has begun the preparation of insurance claims. The automation of the system will be available during the summer of 1990 and will provide a ready method of claims preparation. The main problem the IHS faces at the present time is the manual preparation of claims. When that problem is overcome in the summer of 1990, the actual number of claims submitted will increase many times and the concomitant increase in collections will occur. We estimate that the number of claims to be submitted will provide the $40 million in collections.

Question. If collections are less than $40 million, how will you prioritize the expenditures?

Answer. We will give priority to funding those items that directly support health services to patients.

EQUIPMENT

Question. You are proposing to use $2.5 million of these funds to replace aging outdated equipment and to provide current necessary technology in order to provide safe healthcare, maintain accepted standards and retain staff for the facilities (pg. 134). What is the current amount of equipment you would describe as "aging or outdated"?

Answer. We are presently reviewing and revising our estimate on the amount of aging or outdated equipment.

Question. Is this program to be used to keep this equipment current?

Answer. Yes, it is our plan that this program will be used to keep this equipment current.

Question. How does this differ from the $12 million to be used from the same source for equipment (pg. 135)?

Answer. It does not differ. The $2.5 million is the planned level of expenditures for FY 1990 and the $12 million is the planned level of expenditure for FY 1991.

LOAN REPAYMENT PROGRAM

Question. The IHS is also proposing to use $4.0 million for the Loan Repayment Program (pg.135). This program allows the IHS to repay loans of young health professionals in return for a commitment to provide services in Indian communities. How successful has it been?

Answer. The Loan Repayment Program has been very successful. In FY 1988, when it was first authorized, the program funded 87 professionals. In FY 1989, 201 professionals were funded. Thus far in FY 1990, 54 more professionals have matched to Indian health facilities and applied to the Loan Repayment Program.

Question. What is the normal time commitment for the health professionals?

Answer. Most professionals sign two-year contracts, although three-year contracts are also available.

FACILITY CLOSURE

Question. Also testifying last week was a representative from the Shoshone-Paiute Tribes from the Duck Valley Indian Reservation. The Indian Health Service had proposed to close a facility that cost $4 million and has only been open since 1976. Last year, IHS informed several Senators that it would assist the Shoshone-Paiute Tribes in conducting a facility utilization study of the Owyhee hospital. The objective was to determine how to use that facility in ways that provide the maximum benefit to the health of the Indians served by it, within the existing budget.

What is the status of that study?

Answer. The IHS has conducted 2 previous studies concerning the best way to provide health services to the people of the Owyhee Service Unit, the most recent being conducted from June 1987 through November 1988. It involved intensive tribal consultation. Two major factors shaped the conclusions. First, there are serious quality of care concerns in providing inpatient care in a hospital with a daily census of two patients. It is near impossible for health professionals to maintain the necessary skills with this small workload. Consequently "sick" patients should and are being transported to a referral hospital. Secondly, there is a maldistribution of resources to provide health care to residents of the Owyhee Service Unit, an enormous area covering the northeastern third of Nevada and portions of Utah and Idaho.

The conclusions of the study, which have not been accepted by the Shoshone-Paiute Tribes, are to discontinue inpatient care at Owyhee and to improve ambulatory and community health care to the population that lives great distances from Owyhee and are receiving inadequate health services at the present time. The recommendation included providing 40 hours per week of ambulatory care at the Owyhee facility and 24 hour per day emergency services. This will result in little change in the services to the people of the Duck Valley Reservation as currently patients with serious injury or illness are stabilized locally and then transported to referral hospitals due to the limited services available at the Owyhee hospital. This plan has not been implemented.

The Shoshone-Paiute Tribes is proposing another study to determine the feasibility for "the full utilization of their hospital". This proposal is currently being evaluated for possible funding.

Question. Will IHS continue to freeze any action to close the inpatient position of that hospital until that study is completed?

Answer. The IHS will not close the inpatient service at Owyhee until the study is complete.

The IHS approach to discontinue inpatient care at Owyhee is in step with what is occurring with non-Indian hospitals in rural America. In the private and non-federal public sector, small cost-inefficient hospitals which provide low skill patient care services are downsizing and capacity limiting, the approach that the IHS has taken for many years. A facility in the private sector as small and limited as the Owyhee hospital would almost certainly convert to ambulatory and emergency medical care.

Question. The BIA has implemented a grant program to assist those tribes desiring to do so, to develop plans for the tribal assumption of all BIA activities in the tribe's agency or reservation. Should IHS have a similar program and what size of grant would a tribe need to adequately plan for the assumption of all activities in its service unit?

Answer. The Indian Health Service (IHS) Tribal Management grant (TMG) program managed by the Office of Tribal Activities is similar to the BIA grant program for providing assistance to tribes desiring to develop plans for tribal assumption of all or part of the IHS. The IHS TMG is a competitive program that provides assistance to tribes for feasibility and planning and evaluation activities associated with future assumptions under P.L. 93-638. In addition, the TMG program provides funds for staff training and health program development of potential tribal contractors. Since tribes are at various levels of management capability, it is impossible to determine the "size of grant" a tribe would need to adequately plan for the assumption of all activities in its service unit. In FY 1989, the average award from the TMG program was $44,500.

QUESTIONS SUBMITTED BY SENATOR DON NICKLES

RESOURCES FOR OKLAHOMA

Question. Oklahoma Indian tribes are concerned that they receive less funds per capita from IHS than tribes from any other state, even though Oklahoma is second largest in Indian population. Is this because Oklahoma Indians are better assimilated into society than Indians that live on reservations and are, therefore, assumed to have fewer medical problems?

Answer. Basic health statistics for the State of Oklahoma reflect that the Oklahoma Indian population is more nearly like the general population at large. When applying various criteria for determining resources allocation, such as use of a health status index, the Oklahoma Indians have the lowest rate of all IHS Areas even though it now has the largest Indian population. In terms of Oklahoma Indian people using available IHS health services, their utilization rate is at 5.1 visits per year as compared to the national IHS rate of 7.2. The unit cost per clinical work unit is $71.89 versus the national average of $73.58 and for community field services $376.30 versus $388.11. Several other Areas have much lower numbers than these. In terms of the distribution of the P.L. 100-713, Sec. 201(c)4, Indian Health Care Improvement Fund, Oklahoma City Area received more than $4,500,000 or 45 percent of the fund. These funds brought 9 of their 15 service units up to Level II (40 percent deficiency).

Question. As you are aware, at the request of myself and several other members of the Oklahoma congressional delegation, GAO is looking into the reason that Oklahoma Indians are on the low end of the scale in receiving services. If the GAO confirms this to be a problem and recommends a funding redistribution that is fairer to Oklahoma, will the IHS move forward to implement this recommendation?

Answer. The IHS continues to be concerned about the equitable distribution of resources among the Areas. In FY 1990, the IHS distributed the $10 million Indian Health Care Improvement Fund to the Areas to further reduce funding disparities. The Oklahoma Area received $4.5 million or 45 percent of this fund. The rate of growth for the user population in Oklahoma has been greater than the growth in funding and greater than other Areas. The Oklahoma Area user population increased over 28 percent between FY 1985 and FY 1988. This is in sharp contrast to the remainder of the IHS user population which increased less than 19 percent during the same period. The natural change (births minus deaths) in the IHS service population is at a rate of about 2.7 percent per year or a 29,848 increase in FY 1991. Newly recognized tribes account for the remaining 3,317 people in FY 1991. The IHS will consider all the GAO recommendations relative to a funding redistribution.

Question. Funding for urban health care clinics in Oklahoma has been difficult to obtain since the Indian Health Service has no priority list for urban clinics and hospitals. Will the IHS establish a priority list for urban facilities?

Answer. The Office of Environmental Health and Engineering is currently developing a revised priority list policy that will include urban facilities that reside within a Contract Health Delivery Area. The urban clinics in Tulsa and Oklahoma City are funded by Hospitals and Clinics funds and are therefore currently ranked on the existing facilities priority list.

Question. Would the IHS support a demonstration project that would fund the construction or remodeling of the clinics in Oklahoma City and Tulsa?

Answer. The IHS acknowledges the need for construction or renovation of the clinics in Oklahoma City and Tulsa; however, the IHS uses health facility priority system methodologies to determine the relative priority of all IHS health facilities needs. Past applications of these methodologies have shown that the need for constructing or improving the health facilities in Oklahoma City and Tulsa was not as critical as needs elsewhere. Neither location is on the current IHS Priority List for Ambulatory Care Facilities nor the Repair and Improvement Priority List for major improvement.

The importance of an objective methodology for determining facility construction priorities should not be underestimated. Aside from the importance for efficient program administration and effective use of resources, an objective facility planning methodology assures fair and equitable treatment of all tribes.

Question. The Choctaw Nation of Oklahoma has indicated they would help fund the construction of a new hospital in Talihina and a clinic in Poteau if the Indian Health Service (IHS) would agree to staff and equip the facilities. The tribe has further agreed that these facilities would be provided to the IHS rent free for a certain period of time covering several years. Is the IHS interested in pursuing this offer with the tribe and, if so, how soon can the process begin? If the IHS is not interested, please explain why.

Answer. Joint ventures, whereby tribes arrange for the construction of facilities and the IHS provides a certain level of program and operational support, could prove to be an attractive alternative for providing health facilities. The concept of tribes owning their health facilities has appeal from both a financial and a practical point of view. Since the Indian Self-Determination Act authorizes tribes to become involved in the management of their programs, it seems appropriate to encourage facility ownership.

Other tribes and Indian communities have also proposed tribal funding for facilities and have requested a financial commitment from the IHS. However, the IHS has been unable to respond positively to tribes in these instances because of legislative and other prohibitions. Without congressional authorization, the IHS must adhere to providing funding support for only those projects on the current health facilities construction priority lists. New health facilities at Talihina and Poteau are not on the current IHS priority lists; therefore, the IHS has no authority to provide funds for staffing, equipping, or leasing new facilities at these locations, regardless of the source of design and construction funds.

The Senate Select Committee on Indian Affairs recently addressed similar problems in a hearing about rural Indian health care facilities. The issue of alternative financing by tribes was discussed extensively in testimony by tribal leaders. Additionally, in 1989, the Congress requested IHS to evaluate a proposal from the Warm Springs Tribe, and similar proposals from other tribes, for non-Federal financing of health facilities and to submit reports on the feasibility of this approach. The reports have been prepared and should be submitted to the Congress in May. While the IHS is supportive of this concept, it is not authorized to enter into such arrangements at the present time. Senator McCain has stated that he intends to introduce legislation to remedy this situation.

Question. Contract health care continues to be a problem in Oklahoma. I receive an average of 10 letters a month from individuals complaining that IHS has refused payment for health care services that they had understood would be paid. Many of these instances are most tragic. Is this problem most prevalent in Oklahoma or is it nationwide? What is IHS doing to solve the problem and what can Congress do to help assist in solving the situation?

Answer. The problem is nationwide. During Fiscal Year (FY) 1989 the total number of unmet need cases for all the IHS areas was 26,779. During FY 1989 the total number of unmet need cases for the Oklahoma City Area was 21,440. Therefore, 80.1 percent of all IHS's unmet need cases were in the Oklahoma City area.

The IHS has established management guidelines which will ensure the most effective and economical expenditure of CHS resources. In addition, because CHS resources are limited, the IHS is restricting the expenditure of these funds to predominantly cases of emergency; i.e., when the condition presents: (1) an immediate threat to life, limb, or the senses; (2) a sufficiently unstable (immediate) potential course; (3) uncertain but grave (immediate) probabilities; or (4) clear deterioration of a patient's immediate condition such that a reasonable, average physician would not delay (immediate) intervention. The IHS will continue to manage its limited resources so that it will continue to provide efficient and economical care to an ever increasing beneficiary population.

QUESTIONS SUBMITTED BY SENATOR MARK O. HATFIELD

Question. Currently, the construction of IHS facilities is determined by priority listing system for hospitals, clinics and housing facilities.

Please estimate, according to the IHS priority construction system for clinics, how long it will be until a replacement clinic is likely to be provided for the Warm Springs Indian Reservation in Oregon.

Answer. The IHS ranks only the top ten inpatient and top ten outpatient facilities throughout the IHS through application of the IHS Health Facilities Construction Priority System (HFCPS) methodology. During the most recent application of the HFCPS, a replacement facility for Warm Springs did not rank in the top ten for ambulatory care facilities and was not placed on the construction priority list. Consequently, it is not possible to predict with any degree of certainty when Warm Springs might reach the priority system.

The IHS is revising the HFCPS to improve its effectiveness and accuracy in identifying and assessing priority construction needs. However, even if the proposed Warm Springs facility were placed on the construction priority list, the project would be below previously approved but unfunded projects already on the list. As a result, the IHS cannot speculate when a facility would be constructed, given the current construction backlog.

The Confederated Tribes of Warm Springs of Oregon have proposed to construct their own health facility and provide it rent free to the IHS until the year 2000. In exchange, the Warm Springs request the IHS provide the necessary new equipment and a staffing increase. We understand IHS has detailed information on this proposal.

Question. Would this proposal help alleviate the IHS outpatient facility construction backlog, and would it improve the health care provided to the Warm Springs community?

Answer. The Warm Springs proposal would have no effect on the current health facilities construction backlog since a replacement facility for Warm Springs is not on the IHS construction priority list. However, innovative financing of health facilities, such as that proposed by the Warm Springs Tribes, would enable the total need for new and replacement health facilities nationwide to be met at a faster rate.

Currently the IHS provides a full range of health care to the Warm Springs population through a combination of direct and contract health care services. Direct ambulatory care for the population is provided on a full-time basis at a 55-year old health center located at Warm Springs. The facility was originally constructed as a Bureau of Indian Affairs hospital and contains only about one-third of the space required by IHS criteria for the current workload. Inpatient services are provided through contract care at surrounding hospitals.

The Warm Springs proposal would make additional space, staffing and equipment available for the delivery of health care services to the population. These improvements would enhance health care accessibility for a segment of the service population and would allow for the direct delivery of some services (e.g., optometry, audiology, and various specialty care) that currently are provided through contract care. Also, increased space would enable all health care programs, both IHS and tribal, to be located in a single facility, providing a more integrated health delivery system.

Question. Is the Warm Springs example of self-determination and Tribal participation in helping the IHS meet its health care obligations a good policy?

Answer. The IHS is supportive of the Indian self-determination initiative demonstrated by the Warm Springs Tribes in attempting to become more involved in managing programs serving the reservation community. We also support the concept of tribes seeking alternative financing for health facilities. However, the IHS must consider thoroughly the full commitment and financial obligation of the Federal Government before endorsing individual proposals.

Question. Should the IHS encourage and support the joint venture cost sharing proposal of the Warm Springs?

Answer. The joint venture approach proposed by Warm Springs merits further investigation. In considering the practical and economic arguments in favor of this approach, it is critical that commitments and costs to the Federal Government be fully assessed. The Senate Select Committee on Indian Affairs recently addressed such tribal proposals in a hearing about rural Indian health care facilities. The issue of alternative financing by tribes was discussed extensively in testimony by tribal leaders.

Question. If the IHS does not support this Warm Springs proposal, what would be the IHS alternative for providing an improved clinic on the Warm Springs Reservation, and how long would implementing such an alternative take?

Answer. Since 1981, when the Congress directed the IHS to develop a health facilities construction priority system methodology, the IHS has adhered to constructing only those facilities which ranked high enough under the objective Health Facilities Construction Priority System Methodology to be placed on the priority lists.

Because the proposed Warm Springs facility is not on the current construction priority list, is not possible to predict with any degree of certainty when IHS might be authorized to design and construct a new facility at Warm Springs. Even if, under the next application of the methodology, the facility ranks as one of the highest priority needs and is eventually placed on the priority list, other facilities already on the list take precedency for funding.

QUESTIONS SUBMITTED BY SENATOR JOHN McCAIN

HOSPITAL CLOSURE

Question. For the record, how many hospitals are currently on the list for closure of their inpatient operation and where are they?

Answer. Currently, there are nine hospitals identified by the General Accounting Office for closure of their inpatient operation. These are Cass Lake, Minnesota; Clinton, Oklahoma; Harlem, Montana; Mescalero, New Mexico; Owyhee, Nevada; Parker, Arizona; Wagner, South Dakota; Winnebago, Nebraska; and Fort Yuma, Arizona.

FACILITIES PRIORITY LIST

Question. What is the current backlog of facilities on the priority list, in terms of the number of facilities, number of years to build all (at the current rate of completion), and dollars?

Answer. The current backlog of facilities includes 9 hospitals, 10 health centers/outpatient clinics, 5 youth treatment centers and 179 quarters (at four locations). The estimate to construct all of these facilities is $579,639,000 of which $62,415,000 has been appropriated. At the current rate of completion it will take approximately 10 years and $517,224,000 to complete the facilities.

	Estimated	Appropriated	Request
Hospitals (9)	$408,674,000	$38,017,000	$370,657,000
Hlth Ctrs/Outpt (10)	98,954,000	5,907,000	93,047,000
Youth Trtmt Ctrs (5)	11,200,000	4,000,000	7,200,000
Qtrs 4 locations (179)	60,811,000	14,491,000	46,320,000
Total	579,639,000	62,415,000	517,224,000

More detailed information follows:

Hospitals

	Estimated	Appropriated	Request
Anchorage	$137,785,000	$14,000,000	$123,785,000
Pine Ridge	27,175,000	11,037,000	16,138,000
Kotzebue	56,272,000	5,070,000	51,202,000
Shiprock	53,675,000	3,279,000	50,396,000
Ft. Belknap*	11,965,000	1,105,000	10,860,000
Ft. Defiance	46,055,000**	2,204,000	43,851,000
Crow	29,597,000	1,122,000	28,475,000
Phoenix	36,150,000**	150,000	36,000,000
Winnebago*	10,000,000**	50,000	9,950,000
	408,674,000	38,017,000	370,657,000

* May be replaced with an ambulatory care center.

** Preliminary estimate pending completion of final cost estimate by the Office of Engineering Services.

Health Centers/Outpatient Facilities

	Estimate	Appropriated	Request
Parker	$ 8,430,000	$ 743,000	$ 7,687,000
Belcourt	19,545,000	1,142,000	18,403,000
Taos	5,837,000	263,000	5,574,000
Tohatchi	9,325,000	590,000	8,735,000
Ft. Yuma	6,620,000	667,000	5,953,000
Second Mesa	9,000,000*	642,000	8,358,000
Pinon	12,160,000*	890,000	11,270,000
White Earth	10,281,000*	970,000	9,311,000
Montezuma Creek	10,000,000*	- 0 -	10,000,000
Stillwell	7,756,000	- 0 -	7,756,000
	98,954,000	5,907,000	93,047,000

* Preliminary estimate pending completion of final cost estimate by Office Engineering Services.

Regional Youth Treatment Centers

	Estimate	Appropriated	Request
Aberdeen	$1,170,000	$1,170,000	$ - 0 -
Phoenix (2)	1,895,000	895,000	1,000,000
Portland	6,400,000	600,000	5,800,000
Fbks & Sitka	1,735,000	1,335,000	400,000
	11,200,000	4,000,000	7,200,000

Staff Quarters

	Estimate	Appropriated	Requested
Kotzebue (50)	$25,444,000	$2,359,000	$23,085,000
Pine Ridge (84)	14,016,000	1,559,000	12,457,000
Barrow (29)	16,951,000	9,651,000	7,300,000
Belcourt (26)	4,400,000*	922,000	3,478,000
	60,811,000	14,491,000	46,320,000

* Preliminary estimate pending completion of final cost estimate by Office of Engineering Services.

INDIAN HEALTH FACILITIES

Question. I know of your desire that tribes play a central role in the determination as to how their health care delivery system might be structured.

Last week, a number of tribes testified before the Select Committee that they would like to be able to tap tribal, local, state and other non-Indian Health Service (IHS) resources to construct health facilities.

Isn't it correct that current policy only allows for the construction of IHS facilities, if there are 100% Federal dollars to pay for it?

Answer. The current policy allows only for construction of IHS facilities if they are on IHS Facilities Construction Priority lists. The facilities are designed in accordance with the space programming criteria contained in the IHS Health Facilities Planning Manual. The data that are required for space programming are also used to determine facility staffing.

Funds for construction of Indian health facilities are also available under Public Law (P.L.) 85-151. Under this act the IHS is authorized to make funds available to public and other nonprofit organizations for construction of Indian health facilities to be used in the construction of hospitals which will serve Indians and non-Indians. The guidelines that must be followed for such projects are:

In order for IHS to provide financial assistance, it must be demonstrated that construction of a community hospital by one or more public or other nonprofit agencies or organizations is more desirable and effective than direct Federal Construction.

In order to obtain IHS construction funding, the project must be listed on the health facility construction priority list.

Question. How would you feel about a new policy that would permit the use of other resources in the construction of IHS facilities as long as staffing obligations were taken into account?

Answer. We think that projects requiring IHS financial support should be prioritized in some manner to assure an effective use of Indian health care resources. The facilities must be designed and constructed to IHS standards, with staffing and space allocations within IHS guidelines.

SUBCOMMITTEE RECESS

Senator **Reid**. I thank you very much. The subcommittee will stand in recess until this afternoon at 1 p.m., Tuesday, March 27, when we will hear testimony from the U.S. Fish and Wildlife Service.

[Whereupon, at 9:45 a.m., Tuesday, March 27, the subcommittee was recessed, to reconvene at 1 p.m., the same day.]

(AFTERNOON SESSION, 1:13 P.M., TUESDAY, MARCH 27, 1990)

The subcommittee met at 1:13 p.m., in room S-128, the Capitol, Hon. Harry M. Reid presiding.

Present: Senators Reid, Nickles, and Domenici.

DEPARTMENT OF THE INTERIOR

U.S. FISH AND WILDLIFE SERVICE

STATEMENT OF JOHN F. TURNER, DIRECTOR

ACCOMPANIED BY:

RICHARD N. SMITH, DEPUTY DIRECTOR

JAY L. GERST, ASSISTANT DIRECTOR, POLICY BUDGET AND ADMINISTRATION

DAVID L. OLSEN, ASSISTANT DIRECTOR, REFUGES AND WILDLIFE

GARY EDWARDS, ASSISTANT DIRECTOR, FISHERIES

RALPH O. MORGENWECK, ASSISTANT DIRECTOR, FISH AND WILDLIFE ENHANCEMENT

KATHLEEN F. TYNAN, BUDGET OFFICER

MARY ANN LAWLER, CHIEF BUDGET OPERATIONS, OFFICE OF BUDGET

MARVIN L. PLENERT, REGIONAL DIRECTOR, PORTLAND, OR

MICHAEL J. SPEAR, REGIONAL DIRECTOR, ALBUQUERQUE, NM

JAMES C. GRITMAN, REGIONAL DIRECTOR, TWIN CITIES, MN

JAMES W. PULLIAM, JR., REGIONAL DIRECTOR, ATLANTA, GA

RONALD E. LAMBERTSON, REGIONAL DIRECTOR, BOSTON, MA

GALEN L. BUTERBAUGH, REGIONAL DIRECTOR, DENVER, CO

WALTER O. STIEGLITZ, REGIONAL DIRECTOR, ANCHORAGE, AK

JOHN D. BUFFINGTON, REGIONAL DIRECTOR, RESEARCH AND DEVELOPMENT, WASHINGTON, DC

BUDGET REQUEST

Senator REID. The subcommittee will come to order. This is the time scheduled for the Department of the Interior and Related Agencies Subcommittee to consider the fiscal year 1991 budget request for the U.S. Fish and Wildlife Service. Testifying on behalf of the Service today will be the Director, John Turner.

The fiscal year 1991 appropriation request for the Fish and Wildlife Service totals $534,868,000, which is an increase of $7,059,000 above the adjusted fiscal year 1990 allowance. Of this total request, $408,761,000, and 6,090 full-time equivalent personnel are proposed for the "Resource management" account.

This request is $15,944,000, or 4 percent more than the current level for resource management. The budget proposals would reduce the "Construction and anadromous fish" account to $33,117,000 from the fiscal year 1990 level of $58,098,000.

The "Land acquisition" account is presently requested at the same level as the current allowance of $67,990,000. Two new accounts are proposed this year, and they are the African elephant conservation fund, $1 million and 1 full-time equivalent; and the North American wetlands conservation fund, $15 million, and 17 full-time equivalent.

Last, the budget request for the national wildlife refuge fund is $9 million, or $96,000 above the current level. The subcommittee understands that the administration intends to propose a budget amendment, at some time, in support of its so-called America the Beautiful Program.

That amendment would make the following adjustment, by account: Resource management, plus $11,927,000, but minus one FTE; construction and anadromous fish, plus $156,000; land acquisition, minus $11,290,000, and plus four full-time equivalents.

PREPARED STATEMENT

We welcome you, Mr. Turner, before the subcommittee. We have your prepared statement and it will be inserted into the record in its entirety. Since this is your first appearance before the subcommittee, we will also include a copy of your biography.

We would ask that you introduce any supporting witnesses that are with you today, and ask you to briefly summarize your prepared remarks, and then we will proceed with the subcommittee's questions.

Mr. TURNER. Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF JOHN F. TURNER

Mr. Chairman, I would like to thank you for the opportunity to appear before you today to discuss the President's 1991 budget proposal for the U.S. Fish and Wildlife Service (Service).

At the level requested for 1991, funds will provide the necessary resources to continue the vital efforts and operations of the Service. These funds will enable the Service to fulfill our responsibilities to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of people. President Bush has consistently demonstrated his concern and commitment regarding environmental issues and problems, through personal involvement, professional initiatives, and political support. This budget request further expresses the President's commitment by placing a high priority on fish and wildlife issues. It challenges the Service, and encourages the public to confront and resolve those issues with resources that are economically feasible and goals that are environmentally beneficial.

The Nation is experiencing a rising level of participation in outdoor recreation, enjoyment of our natural resources, and interest in concerns about the health and welfare of the environment. There is a consensus within the Administration and throughout the Service that this presents us with an opportune time to implement a number of initiatives that will complement our role in protecting existing resources; supplement our efforts to restore those that have suffered losses; and enhance our ability to act now to prevent future threats.

FISCAL YEAR 1991 BUDGET OVERVIEW

The budget request for Fiscal Year 1991 is $935.6 million. This amount includes $535.6 million for current appropriations, which is an increase of $7.8 million over 1990 and an increase of $125.4 million over the 1990 President's Budget.

America the Beautiful

The major initiative proposed in this budget request is President Bush's America the Beautiful program. America the Beautiful supports the protection and restoration of natural resources through funding for enhanced resource protection and restoration and enhanced recreational opportunities. Under America the Beautiful, the Service is requesting $140.5 million. Included in this request are $30.5 million for endangered species activities; $35.9 million for wetlands protection, restoration and management; $15 million for activities under the North American Wetlands Conservation Act; $56.7 million for land acquisition; and $2.3 million for construction projects.

Endangered Species. The $30.5 million request for endangered species is an increase of $150,000 over the Fiscal Year 1990 funding level. This level of funding will allow the Service to fulfill requirements of the Endangered Species Act Amendments, increase listing of candidate species by five or six per year, and maintain the 1990 level of Endangered Species Grants to States. Necessary increases for these activities will be offset by savings realized from completed work on habitat conservation plans, and reduced activities for candidate nongame species.

Wetlands. In support of the President's goal of no net loss of wetlands, the Service is proposing $35.9 million for wetlands conservation activities. This is an increase of $11.8 million over the 1990 operating level. Our efforts will concentrate on three coordinated approaches: 1) protection to reduce loss of wetlands; 2) restoration and enhancement, including the Farm Bill program; and 3) research, education and mapping. By building on existing Service programs the requested increases will optimize the Service's ability to identify, protect and restore high priority wetland areas. The specific components of the increase requested under America the Beautiful for wetlands are the bay/estuary program (+$500,000); wetlands restoration and enhancement under the Farm Bill (+$2 million), the North American Waterfowl Management Plan (+$1.1 million) and on/off Service lands restoration (+$500,000). Increases are also requested to enhance refuge water supplies (+$2.8 million), and to conduct Federal/private cost sharing projects (+$2.4 million). Increases are requested for Research/education and mapping efforts including the National Wetlands Inventory (+$2 million), wetlands contaminant research (+$225,000) and initiation of a wetlands/migratory bird database (+$400,000). The research related to coastal wetlands loss will continue in Fiscal Year 1991 at reduced levels (-$200,000).

North American Wetlands Conservation Fund. A complementary effort for these activities is being proposed with a request for appropriations of $15 million for the North American Wetland Conservation Fund. These funds, in addition to the $10 million from anticipated revenues for the Fund, will provide us with the resources needed to accomplish the goals of the North American Waterfowl Management Plan and the Tripartite Agreement between the United States, Canada and Mexico. The funds will be used for land acquisition, restoration, enhancement and management of habitat in the United States and Canada. The estimated revenues of $10 million include $9 million in interest on the Federal Aid in Wildlife Restoration Fund and $1 million from fines and forfeitures collected pursuant to the Migratory Bird Treaty Act.

Land Acquisition. The amount requested for land acquisition in 1991 is $56.7 million. In addition to inholdings and increases for acquisition management, these funds will provide for 28 acquisition projects in 19 states for protection of natural resources. Further, the Service will be able to protect an estimated 50,000 acres of wetlands in 1991 using the $30.6 million in revenues from the sale of duck stamps, refuge entrance fees and import duties on arms and ammunition under the Migratory Bird Conservation Fund.

Construction. The $2.3 million for construction funds in America the Beautiful are for activities on three refuges to protect natural resources. The request includes $2.1 million to repair or replace bridges and roads needed at Okefenokee National Wildlife Refuge to protect the refuge from wildfires, $90,000 for study and design of repairs or replacement of the sewage treatment facility at Crab Orchard National Wildlife Refuge, and $133,000 for construction of a sewage system at Lacassine National Wildlife Refuge.

Legacy 99

As a complement to the President's America the Beautiful initiative, the Secretary is proposing a major infrastructure initiative in support of stewardship. This program will result in improved public lands and facilities and is intended to continue through the year of 1999, the 150th anniversary of the Department of the Interior. Resources requested under this program will ensure that the Service is able to implement actions to maintain and improve its lands and facilities. Funding requested for these efforts would include $45.9 million for cyclical maintenance, repair and rehabilitation, and equipment replacement; $9.4 million for construction planning and rehabilitation projects at seven refuges, hatcheries and research facilities; $13.5 million for dam safety inspection, repairs and rehabilitation; and $14.6 million for hazardous materials activities (cleanup, underground storage tank requirements, investigations and the irrigation drainage program).

African Elephant

The African Elephant Conservation Act of 1988 established a fund to provide assistance for conservation and protection of the African elephant. In Fiscal Year 1991 the Fund will be established as a separate account. The Service is requesting $1 million for this account in 1991. Funds will be used for the payment of rewards for information leading to a civil penalty or criminal conviction under this Act, and for assistance to African countries for enhanced research, conservation, management and protection. Additional funds will be available to the fund from anticipated donations, totaling $500,000.

Global Change

As part of the Administration's Fiscal Year 1991 initiatives, the Service is requesting $3.6 million for global change studies. These studies will address the rate and effects of sea level rise on wetlands, and ground breaking research to identify indicator species for detection of global change and determination of the effects of global change on fish and wildlife.

Resource Management

The Service's request for Resource Management is $420.7 million, an increase of $27.9 million above the 1990 funding level. A total of $66.4 million is requested for the Service's operational program under America the Beautiful.

Fish and Wildlife Enhancement. The request for Fish and Wildlife Enhancement is $64.2 million. This is an increase of $5 million over the 1990 adjusted level of funding. Funding for endangered species and wetlands are requested as part of the proposed America the Beautiful initiative. The Service will complete the field portions of a habitat assessment study for canvasbacks and a pilot study for Wetlands advanced planning in the Chesapeake Bay (-$125,000).

Refuges and Wildlife. The total request for Refuges and Wildlife is $169.7 million, a $12.1 million increase over the 1990 adjusted funding level. In Refuge Operations, requests for increases include $200,000 to detect and mitigate the effects of contaminants on Service land; $400,000 to increase our volunteer program; and $250,000 for studies related to potential oil and gas development on the Arctic National Wildlife Refuge.

The 1991 request provides for continuation of a $5.2 million increase provided in 1990 for the operation of refuges, as well as a substantial increase for refuge maintenance. As public education displays will be installed at the Oregon Coastal Aquarium, a $1,000,000 decrease is proposed. A reduction is also proposed for operational funds at Lake Ophelia National Wildlife Refuge (-$325,000), the refuge will be under caretaker status. Funding increases provided in 1990 for operation of Hawaiian and Alaskan refuges will be continued in 1991 with reductions made for completed projects. Although a decrease of $500,000 is proposed for the challenge grant program, I referred earlier to an increase of $2.4 million being requested in the Wetlands section for Federal/private cost sharing projects.

The funding for law enforcement activities includes increases of $750,000 for upgrading the Law Enforcement Management Information System in order for the Service to comply with incident reporting requirements, $300,000 for enhancing investigations of illegal commercialization of Great Lakes fishery resources, $250,000 for training and equipment to enhance the Service's drug enforcement capabilities, and $450,000 for full operation of the National Forensics Laboratory in Ashland, Oregon. A decrease of $150,000 is requested for African elephant conservation, as the Service is requesting $1 million for the African Elephant Conservation Fund.

An increase of $4.6 million is requested for migratory bird management. This increase will enable the Service to take advantage of opportunities for wetland restoration under the North American Waterfowl Management Plan and opportunities on private lands as well as providing for improvement of monitoring and survey activities. These increases will enable the Service to improve its ability to determine waterfowl population size and distribution, and will focus effort on the black duck and pintail. The Service will continue analysis of banding and management efforts related to nongame migratory birds at a reduced level resulting in a proposed decrease of $400,000.

Fisheries. The 1991 request for Fisheries is $53.8 million representing an increase of $6 million over the 1990 adjusted funding level. In 1991 we will be increasing the funding to 21 hatcheries involved in the production of Pacific salmon, steelhead trout, Atlantic and Gulf Coast striped bass, lake trout, and other species. The budget reflects an increase of $1.8 million for the Lower Snake River Compensation Plan to provide for full production levels to meet mitigation requirements. An increase of $925,000 is requested to enhance the Service's contribution to major interjurisdictional fisheries restoration programs. We are directing this increase to stations that coordinate restoration activities for Atlantic salmon, Atlantic and Gulf Coast striped bass, lake trout and other species including paddlefish and sturgeon.

Finally, $250,000 for additional assistance for marine mammal tagging and related conservation and management activities is requested. The Service is implementing this marking program in Alaska that will provide essential information to help curtail the illegal take and trade of marine mammal parts.

Funding ($1,444,000) for operation of tribal fish hatcheries and assistance stations is included in this request. For Quinault, Alchesay, Williams Creek and Mescalero hatcheries, an increase of $200,000 is also requested. An increase of $400,000 is requested for the new hatchery at Nisqually, Washington.

To offset increases in fish food costs an increase of $370,000 is requested. Although a decrease of $200,000 is proposed in Fisheries, training will be continued at the National Training Academy and costs will be funded by Service offices receiving the training.

Research and Development. The request for Research and Development for 1991 is $69.1 million and contains increases discussed previously for global change and wetlands research. This is a net decrease of $1 million from the 1990 adjusted level of funding, resulting from the completion of studies and other projects for which further funding is no longer needed. This funding level contains full funding for operation of a number of research facilities including, for example, the Northeast Anadromous Fish Laboratory, Hagerman Laboratory, and the Southeast Fish Cultural Laboratory.

Funding provided in 1990 enabled the Service to reduce a backlog of tissue samples awaiting chemical analysis resulting in a reduction of $500,000.

An increase of $500,000 is requested for research on the decline of pintail ducks. The other changes requested include a discontinuation of the Fisheries and Wildlife Review (-$565,000), completion of specific studies on purple loosestrife, sea bird mortality, waterfowl survey techniques, mountain lions, and walrus. Nongame research will be maintained at $1.5 million in 1991.

Several fisheries research projects will also be discontinued in 1991, including the development of warm water instream flow methodology for the southeastern United States, and the northeast coastal areas study. The Service will complete the development of habitat suitability criteria related to anadromous fish in the Middle Snake River in 1990 and a reduction of $100,000 is proposed.

The Service is requesting an increase of $650,000 in Cooperative Fish and Wildlife Research Units for staff and operational funds.

General Administration. The total funding requested for General Administration is $63.9 million, which is an increase of $5.6 million over the 1990 adjusted funding level. Requested increases include $60,000 for improved internal controls, and $400,000 to provide adequate engineering expertise for Service programs. Base adjustments totaling $5.3 million are included in the 1991 request for nationwide and regional fixed costs including space, telephones, postage and other operational costs. Reductions totaling $550,000 are requested pursuant to completion of the Lake Erie shoreline protection study and for African elephant conservation as the Service is requesting $1 million for the African Elephant Conservation Fund in 1991.

Funding for the National Wildlife Refuge Fund is being requested at a level of $9 million. These funds, combined with the $3.6 million in net refuge receipts from 1990, will provide a total of $12.6 million for payments to counties in 1991. This will provide for payments to counties at 75 percent of the fully authorized level.

The Fiscal Year 1991 budget funds the Sport Fish Restoration and Federal Aid in Wildlife programs, to promote sound stewardship of our fish and wildlife resources. It is estimated that $212.4 million will be available to sport fish restoration from receipts collected from taxes on fishing equipment, motorboat fuels and import duties. Federal Aid in Wildlife will have an estimated $134.3 million to support State projects in Fiscal Year 1991 from receipts from taxes on firearms, ammunition and archery equipment.

Mr. Chairman, this concludes my prepared statement. I would be pleased to answer any questions you may have.

BIOGRAPHY OF JOHN F. TURNER

John F. Turner was sworn in as the Director of the U.S. Fish and Wildlife Service on August 4, 1989.

Mr. Turner was first elected in 1970 and served for 19 years in the Wyoming legislature. He was Senate President in 1987 and 1988 subsequent to serving as Caucus Chairman, Majority Floor Leader and Vice-President of the Wyoming Senate. Mr. Turner has been Chairman on numerous Committees including the Senate Committee on Minerals, Business, and Economic Development. He has worked on legislation in the state including recodification of state game and fish laws, minimum stream flows, wildlife trust fund, penalties, license fees, designations, and fisheries.

Mr. Turner has a Bachelor of Arts degree in Biology from the University of Notre Dame, and a Masters degree in Zoology from the University of Michigan. He has done research on the osprey and bald eagle in the Grand Teton/Yellowstone region and in the Intermountain States. Mr. Turner has published over two dozen works on wildlife, including a book on bald eagles which was published by Random House in 1971.

Mr. Turner was appointed to the National Park System Advisory Board and recently he became a member of the National Wetlands Policy Forum. He has served on numerous other committees, including the Secretary's Pride in America Advisory Task Force, the State BLM Advisory Board and the SBA State Advisory Board.

Mr. Turner was born in Jackson Hole and is a lifelong resident of Wyoming. Mr. Turner is married with three children.

BIOGRAPHY OF JOHN DOUGLAS BUFFINGTON

John Douglas Buffington joined the U.S. Fish and Wildlife Service (FWS) as the Chief of the Office of Biological Services in 1980. In May of 1982 he became Deputy Regional Director for Research and Development for the FWS.

He was appointed Regional Director for Research and Development in December, 1989.

Dr. Buffington served in the United Stated Army (1967-1969) as 1st Lieutenant and Captain at Fort Detrick, Maryland. From 1969-1972, Dr. Buffington was Assistant Professor of Biological Sciences at Illinois State University. He was employed at the Argonne National Laboratory (1972-1977) in several capacities including the Assistant Director for the Environmental Studies Division.

Dr. Buffington served as staff, and later as Senior Staff Member for Environmental Data and Monitoring on the President's Council on Environmental Quality (CEQ) from 1977 to 1980.

Dr. Buffington was born in Jersey City, New Jersey on November 26, 1941. He earned a Bachelor of Science degree from St. Peter's College in 1963, and completed his Masters (1965) and Doctoral (1967) degrees from the University of Illinois in animal ecology. Dr. Buffington is married with two children.

HIGHLIGHTS OF THE BUDGET

Mr. **Turner**. Mr. Chairman, on behalf of the Fish and Wildlife Service, Department of the Interior, let me tell you that it is a pleasure for me, as a rookie Director, to make my first appearance before you on behalf of the President's budget for our agency.

As you know, we are charged with the diverse mandates to conserve and to enhance the fish and wildlife resources of this country and their habitat. I am proud to bring a budget before you totaling $936 million, and almost $8 million over the level enacted by the Congress for 1990. It is $125 million more than the last Presidential budget that you had before you.

Mr. Chairman, I would like to briefly explain some of the highlights of this request. As you pointed out, about $400 million of the 1991 budget is in permanent funds. What we will discuss here today, I would imagine, is the appropriated funding. The Service's portion of the America the Beautiful Program totals $141 million, and appropriately reflects the President's wish to focus on resource protection and conservation and management of recreational resources.

AMERICA THE BEAUTIFUL

Our agency's part of America the Beautiful includes resource funding for protection, land acquisition, and construction. The Secretary of the Interior and the President have set a goal to leave the lands in our agencies in better shape than we found them. We will attempt, through Legacy 99, to bring our refuges, hatcheries, and research facilities up to par and take care of some long overdue maintenance. $83 million is requested by the Service for Legacy 99.

WETLANDS

I am very proud of the wetlands package that we bring before you. This request shows that President Bush and Secretary Lujan are indeed serious about wetlands protection. A total of $130 million is requested in 1991 for the Fish and Wildlife Service including the North American Wetlands Conservation Act, the bay/estuary program, restoration of wetlands, research, and even challenge grants.

You will note, Mr. Chairman, funding is requested for the purchase of water rights——

Senator **Reid**. I saw that. That's great.

Mr. **Turner**. Other initiatives include $3.6 million for global climate change research. A new initiative addresses conservation of the African elephant including participation in international efforts.

We are trying to make an improvement in refuge revenue sharing, and I am very excited about the other new initiatives that we are proposing. Our thanks to Chairman Byrd for funding to initiate a training center. For the first time we will have an opportunity to provide a centralized, highly focused and comprehensive training program for what is basically a scientific agency.

For refuges and wildlife, you will see an increase that totals about $12 million. I am very pleased with the fishery budget, it is almost 30 percent above the request that you had before you in the last Presidential budget.

Mr. Chairman, those are just a few of the highlights. Overall, I think it is a very thoughtful and positive budget. I believe that it reflects President Bush's personal involvement, love, and commitment to the out-of-doors, and his concern for the fishing and wildlife resources of this country.

INTRODUCTIONS

With that, Mr. Chairman, you can see that I have brought a number of our people with me to answer committee questions. As it is a diverse operation, all of the Assistant Directors are here. As you know we are scattered throughout the country, with almost 500 refuges and 70 hatcheries, and other facilities. So, about all of our Regional Directors are here to answer questions about their parts of the country. We have the Secretary's Budget Office representatives, as well as our own budget officer.

Sitting to my right here is Dick Smith, my Deputy; and I will ask other members to identify themselves, as they are called on to answer your questions.

FISCAL YEAR 1991 BUDGET REQUEST

Senator REID. I am wondering—my first question is that I am wondering if someone from Wyoming can pronounce that fish. [Laughter.]

Mr. TURNER. We do not have anyone here from there.

Senator REID. OK. Let's open up our discussion with the administration's proposed new initiative, entitled, America the Beautiful. The fiscal year 1991 President's budget appendix indicates that a budget amendment will be submitted for this initiative.

It is the subcommittee's understanding that no new authorizing legislation is required for the Service's portion of this initiative; is that right?

Mr. TURNER. That is my understanding, Mr. Chairman.

Senator REID. While the administration claims that the Fish and Wildlife Service portion of the America the Beautiful Program totals $140,472,000, in reality, most of this total is for activities which have been traditionally included in the budget.

In fact, the total net increase for fish and wildlife programs under the America the Beautiful proposal is only $793,000; is that correct?

Mr. TURNER. Mr. Chairman, it is correct. However, this includes funding for the North American wetlands conservation fund, and that is $15 million, in addition to the revenues that bring the total to $25 million.

There is $15 million in increases there and, in addition, we have a considerable increase in the request for land acquisition. I think the last budget request you had from the President you did not see this size of request for land acquisition.

Senator REID. But I think, Mr. Turner, that the point is that if you add these numbers up, there is only a difference of less than $800,000.

Ms. **Tynan**. Mr. Chairman, Kathy Tynan, budget officer for the Fish and Wildlife Service, and you are absolutely correct. That change is $793,000. Mr. Turner was pointing out that he has an $11 million increase that he is requesting for wetlands, specifically in the wetlands restoration area.

And, of course, you are correct that that increase is offset by a decrease in land acquisition funding.

BUDGET AMENDMENT

Senator **Reid**. The point—and we appreciate that clearance on the record, but when will the administration submit an amended budget request for the $792,000 in net increases which would be requested for the America the Beautiful Program?

Mr. **Turner**. Mr. Chairman, regarding questions on legislative action, I think I will ask the Secretary's representative from the Budget Office, Mary Ann Lawler, to answer that question.

Ms. **Lawler**. Senator Reid, there are several budget amendments, technical budget amendments, that the administration is proposing and they are putting together. It is my understanding that they are in the Director of the Office of Management and Budget's office.

Senator **Reid**. There have been a lot of things lost there, you know.

Ms. **Lawler**. We expect those technical amendments to get up here within a week or two.

Senator **Reid**. Do you really think so?

Ms. **Lawler**. We hope so.

Senator **Reid**. This, of course, is a matter of some sensitivity. Without being partisan, and I think that this is a bipartisan statement, but the last administration was known for proposing legislation to Congress, and then taking full credit for these proposals, but then not actually budgeting money for these proposals.

President Bush has not done that to this point, which I am personally grateful for, at least as much; but subsequently though, when Congress funded those items, we were repeatedly accused of busting the budget for the programs that the President suggested.

CONGRESSIONAL ACTION

So, Director Turner, if the administration wants these increases from this subcommittee, it is going to have to submit a budget amendment for the America the Beautiful Program, and I hope that you will carry that message back to the Department, but not as much as the Department as the Office of Management and Budget.

I was being somewhat facetious when I stated to your associate that a lot of things get lost in the Office of Management and Budget, and there are a lot of things that don't come out after we know that we put them in.

So, I wish you would take that message back, especially to them, when they give you their OK. Next I would note that many of these new initiatives contained in this America the Beautiful proposal are arguably not new at all.

Many of these, such as the increased refuge operating funds and increased funding for wetlands are things which we have been adding to the budget consistently in recent years. So, we welcome the administration and their acknowledgement that these programs are important, but we do have to work together on the funding.

You know, we have been doing things—we, the Congress—in making America more beautiful. We are reclaiming abandoned mine sites, and we have been protecting wetlands, and perhaps not enough, but we have worked to do that.

We have been buying and creating new park lands and wilderness sites, and we have been increasing operations and maintenance funding so the Federal land management agencies can better take care of what they already have, and I know, Mr. Turner, you all being from Wyoming, and my being from Nevada, with a large Federal presence there, how difficult it can be for Federal agencies when they are underfunded and don't have enough people to do the work.

Now, we in Nevada feel that significantly with the Bureau, and they are hundreds and hundreds of applications behind, which is really creating problems.

So, we here in Congress are doing all that we feel that we can, but with real dollars, and not just talk, and we think that this is what is important, rather than just shuffling figures around.

NEW INITIATIVES

So, we think that the America the Beautiful initiative could have some beneficial impact on the country, but it is going to take money to do it, and it can't be done with imagination.

And, again, the committee knows that the criticisms that are in issue of not of your doing, and you are new on board, and we understand that, and no one is annoyed with you. You just happen to be the first agency that comes before the committee that we can talk about this.

So, having said this, and rather than dealing with the package as a whole, the subcommittee will address specific America the Beautiful proposals this morning in the context of the programmatic area where these proposals occur.

So, when you submit for the record your America the Beautiful detailed table, we will have a better chance to review that and talk about it, and that should be coming in the next little bit.

The Service is requesting $24,344,000 for the Endangered Species Program, which is the same level as the current level of—well, which is the same as the current level and $148,000 below the fiscal year 1991 base level.

To make matters more confusing, an additional $108,000 would be added to this program under the America the Beautiful proposal, and at the same time, this proposal would decrease employment by one full-time equivalent.

So, you will have to acknowledge that that is a little confusing. Before we turn to questions about the America the Beautiful Program, I would like to ask some questions of particular importance to the State of Nevada.

What effect will the reductions in the Endangered Species Program budget have on your capacity to meet the obligations related to the emergency listing of the desert tortoise?

DESERT TORTOISE

Mr. **Smith**. Senator, I signed the finding on the desert tortoise yesterday, and it was sent to the Federal Register.

Senator **Reid**. And what were the findings?

Mr. **Smith**. The desert tortoise is listed in Nevada and California as threatened. So, the finding is complete. There is still information needed on the disease issue, including what the extent of the disease is, and what we can do about it.

So, in relation to the budget, I don't believe there is any increase in resources to answer those questions.

Senator **Reid**. Do you think that most of the work has already been done; is that what you are saying?

Mr. **Smith**. Yes.

Senator **Reid**. And will the preserve that has been set up by virtue of the contributions, that should give us additional direction to studies for the disease as I understand it.

Mr. **Smith**. I would have to turn that over to Mr. Turner.

Mr. **Turner**. Mr. Chairman, let me just say a few things. The desert tortoise issue has been as difficult for your constituents as it has for ours, but overall I think the process has gone quite well. This speaks well for the people in your State who have tried to work positively within the requirements of the Endangered Species Act. They have done some very innovative things with both the developers and the community of Las Vegas, and might pioneer some new directions in how we deal with endangered species.

I think that we have adequate resources to continue work with tortoises and the needs of your State. I might ask—we have Marv Plenert here, the Regional Director for Nevada, and he has had to wrestle with this, and he might know more at this point.

NEVADA HABITAT CONSERVATION PLAN

Senator **Reid**. Marv, let me just make a statement here. The southern Nevada home builders, we believe, had a highly success partnership with the Fish and Wildlife Service, and the Bureau of Land Management, and the southern Nevada home builders, in developing a strategy, and they call it the habitat conservation plan, to ensure the continued existence of the desert tortoise will continue, but also allow for the housing units of Las Vegas to continue, because it is so rapidly increasing.

But I guess my question is that I am concerned that the funding levels posed will adversely affect the Service's ability to review and approve the habitat conservation plans, and hopefully not jeopardize the positive way that southern Nevada has dealt with this desert tortoise issue. So, with that brief statement, please proceed.

HABITAT CONSERVATION PLAN FUNDING

Mr. **Plenert**. Well, we hope that the funding level will be adequate to address the habitat conservation planning. As you know, the local municipality, the city, has been very active in working with us on the preliminary steps in developing a habitat conservation plan.

We have worked with, and are working with the BLM, the Bureau of Land Management, on a generic consultation under section 7 of the Endangered Species Act, to look at a very broad area around Las Vegas.

The lands that they are going to divest as part of the—I can't remember the name of that act, but you probably know it—where they divest the lands into private ownership.

Senator REID. Burton-Santini.

Mr. PLENERT. Thank you, sir.

Senator REID. I will never forget one of those names.

Mr. PLENERT. I shouldn't, and I won't any more. But, to do it on an individual basis, if we had to go through a section 7 on every Federal action down there, we could not handle it.

By working with BLM to come up with a generic or a broad section 7, where we look at all of the issues in one consultation, I think we can do that, and that is what we are looking at.

There are schools that aren't going to be on public lands, and flood control, and a whole host of other things going on there that we hope to look at. We have excellent cooperation with the local area and BLM, and we have hired an extra biologist in our Reno office.

And in California, we have put on some extra people working with BLM, and I have hopes that we can do it. It is going to be a struggle in fiscal year 1991 with the reduction in consultation. You know, you always need more money, but I think we can do it.

Mr. TURNER. Mr. Chairman, the areas that we have programmed for reduction in habitat conservation are basically in California and Florida, and there are some in Texas.

Senator REID. And they deserve it. [Laughter.]

Mr. TURNER. There is a reduction proposed in the tortoise effort in Nevada. The BLM has some money programmed for this effort and we will see that as well.

ENDANGERED SPECIES PROPOSAL

Senator REID. Returning to the America the Beautiful Program. Within the $108,000 total for this America the Beautiful amendment, there are a number of changes in it programs. Could you explain, Mr. Turner, to the committee each of the changes which are included in the net increase of the $108,000 proposed under this program?

Mr. TURNER. Mr. Chairman, I am going to ask Jay Gerst, who has the figures here. He is the Assistant Director for Policy, Budget and Administration.

Mr. GERST. The $108,000 is a net figure based on quite a number of individual increases and decreases in the endangered species subactivity. As you pointed out earlier, the America the Beautiful initiative repackaged and reformatted the budget, and there is actually an $11 million increase in resource management overall.

The net change, because of America the Beautiful in the Endangered Species Program is only $108,000, and that includes $148,000 in base changes, a $500,000 increase for the Endangered Species Act amendments, and $250,000 to address the additional listing workload. A $250,000 decrease in nongame and a decrease of $540,000 in consultation are also proposed.

I have a list of increases and decreases in an America the Beautiful table that I can submit for the record. The $108,000 is a net product of increases and decreases that net out to a very slight increase.

Senator REID. OK. What the committee is concerned about is why didn't the Service propose an endangered species budget request of $24,452,000, and skip the confusing and pointless presentation of reductions to the base funding level, and add-backs for the America the Beautiful Program?

AMERICA THE BEAUTIFUL PROPOSAL

Mr. GERST. As you know, America the Beautiful is an administration initiative, and the Service's portion is supportive of that overall multiagency initiative. It is somewhat confusing in presentation of the Fish and Wildlife Service budget, but what we have attempted to do through these tables is to show what the budget needs really are, as negotiated through OMB and submitted to Congress, both with and without America the Beautiful.

So, the numbers that you see represent what our needs are as negotiated through the executive branch.

Senator REID. You know, I am not being critical of you, and your agency, because it is like this with all agencies with programs like this, but it is all show and no money.

You have been given an assignment to come up with the money for this so-called America the Beautiful Program, and with the tremendous problems that you have had with endangered species and all of those other things that it is absolutely mandatory that you do, there isn't money for a new program unless you come up with new money, and now you are doing that, and so what you are doing is that you are juggling the figures.

And this is what Congress has been criticized for, and the President has been criticized for smoking mirrors, or blue smoking mirrors, I guess, is the real word. Again, I know that you have a job to do, and you have done a pretty good job of making something out of nothing.

Mr. GERST. But we have tried to do a clear job of explaining where all the pieces are, Senator.

Senator REID. I appreciate that very much. Before we leave the endangered species, is there anyone here, Mr. Turner, that can give me an idea of when the recovery program for the cui-ui in the Lake Pyramid area will be?

Mr. PLENERT. I can do that, sir.

Mr. TURNER. Mr. Plenert.

Mr. PLENERT. We are actively working on the recovery plan now, and it will be complete in early 1991, about January or right after the new year.

Senator REID. A year from now?

Mr. PLENERT. About a year from now, yes.

ENDANGERED SPECIES LISTING

Senator **Reid**. Your original 1991 budget request supports a listing of approximately 50 species, for an average cost of $70,000 per species listed. Why, with the proposed increase of $250,000 under the America the Beautiful Program are you able to list an additional 6 species at an average cost of only $42,000 per species? Is the marginal cost of listing additional species that much lower?

Mr. **Turner**. Mr. Chairman, we have species that we spend $100 on, and we have had species, like the Bald Eagle, that we have spent $3.5 million on. Maybe Dr. Ralph Morgenweck——

Senator **Reid**. Tell me about that one for $100.

Mr. **Turner**. Let me turn that question over to Ralph Morgenweck.

Dr. **Morgenweck**. It is a plant.

Senator **Reid**. A plant?

Dr. **Morgenweck**. Yes; a plant in Puerto Rico. I am Ralph Morgenweck, and I am the Assistant Director of Fish and Wildlife Enhancement. I think that our average costs are somewhere in the neighborhood of $50,000 to $70,000 for listing one species. We are trying to get more efficiency out of our listing operations than we have in the past by utilizing multiple listings.

By doing multiple listings we can do more listings for fewer dollars, and so we are looking at opportunities around the country to complete that kind of multiple species listing.

CANDIDATE SPECIES AWAITING LISTING

Senator **Reid**. How many species are awaiting review?

Dr. **Morgenweck**. Currently, we have about 3,600 candidate species, of which 600 are what we call category one. Category one species are those species that we have enough information to make a determination and propose the listing.

So, there are quite a few species that are waiting for their turn to be listed.

Senator **Reid**. And using this figure that you are using, it is going to take a long time then?

Dr. **Morgenweck**. Yes; that is correct.

Senator **Reid**. How many of those species do you think we will lose as a result of not having them on the list by now?

Mr. **Turner**. As a result of the 1988 amendments we have instituted a monitoring system to try to ensure that we don't lose any. When we do see one of the species in trouble, we have emergency listing authority to quickly get it on the list.

As a result, we are annually conducting reviews of these candidate species to see what their status is.

Senator **Reid**. What would the annual listing rate have to be to maintain a sustaining level in the number of candidates added to the list?

Dr. **Morgenweck**. This last year we reviewed our candidate list of plants and animals and increased the animal candidates by about 75. We decreased the plant list by several hundred.

The reason we decreased the plant list by several hundred was that we straighted out some confusing taxonomy on some of the plants. Some were not, in fact, legitimate species.

If we have 600 category one species, it will take us 12 years at the rate of 50 or 55 species per year; 10 to 12 years.

Senator **Reid**. That is if no others come up.

Dr. **Morgenweck**. That is correct, and they certainly will, so it would be hard for me to estimate. It will certainly be longer than 12 years.

Senator **Reid**. The America the Beautiful Program also proposes a reduction of $250,000 for habitat preservation activities associated with nongame candidate species for listing. Is this reduction proposed because these activities are considered unimportant, or what was the reason?

NONGAME

Mr. **Turner**. Mr. Chairman, nongame is something that we have been working very hard on. We are making a considerable effort and have close to $2.4 million, in the nongame program.

Our wetlands program certainly has a nongame component. We need to do a better job, and this year we have a task force effort going on within the Service, and in discussions all across the country we are addressing what kind of bold and envisionary programs we can bring to the Congress; that is our game plan.

We want to come back to you with a responsible and progressive program, not this year, but hopefully next year. We do a great deal for nongame, but admittedly, as we look into the next century we need to do considerably more.

Senator **Reid**. The committee has included substantial funds in the past for specific habitat conservation plans in San Diego, Riverside, Kern County, all of which are in California, Austin, TX, and Key Largo, FL.

Would you indicate your impression of the value of these specific conservation plans and make any suggestions that you may have regarding better and more efficient ways to mediate preservation and development conflicts?

HABITAT CONSERVATION PLANS

Mr. **Turner**. I would ask Dr. Morgenweck to reply to that.

Dr. **Morgenweck**. We think the habitat conservation plans are very valuable. They are the one mechanism by which a privately owned concern has an opportunity to carry out their project and still deal with situations having endangered species on or near their property.

We feel that the habitat conservation approach is a valid approach. There are some difficulties with habitat conservation planning. One is that it tends to get very labor intensive. It does take time to get all of the parties of interest in an area together to get a plan developed, get it through the process, and prepare the appropriate documents.

One of our problems that we are trying to work on is what should be done during the interim, between the time the development entity asks for a permit and the time that we can actually get the completed plan approved.

We are trying to shorten that timeframe. Right now it takes a minimum of 6 months to do a plan, and more often it takes 1½ to 2 years for the process to be completed.

Senator **Reid**. The committee still has a question about the specific plans that Congress has been involved in, and as I mentioned we have communities in California, Texas, and Florida to come in with specific conservation plans What I am asking is can you make any suggestions that you may have regarding better and more efficient ways to handle the situation for these programs?

Dr. **Morgenweck**. Mr. Chairman, I think that the entire activity, habitat conservation planning, is one that will grow, because more and more projects are proposed in areas where there are endangered species. HCP's are the way we have to apprise the private sector of endangered species responsibilities. I don't have specific knowledge about how all of the habitat conservation plans that were mentioned will be completed with reduced funding.

I am not aware of the specifics on any of those plans and their value, Mr. Chairman.

NORTHEAST HYDROPOWER RELICENSING

Senator **Reid**. In reviewing the budget, I also note that there is a proposal to eliminate the Services office in Orono, ME, and this is a new office. Given the large number of hydroelectric relicensing applications in northern Maine, and the contaminants work, which this office is presently engaged in, why is the Service proposing to close this office and conduct its activities from an office in a neighboring State?

Mr. **Smith**. I think the only answer I can give you, Senator, is that we think we can handle these requests in our office in New Hampshire. Hopefully, we can answer any questions about relicensing that are directed to that current office.

Senator **Reid**. It is my understanding that in northern Maine there is a number of new proposals for hydroelectric, and it would seem that there should be a lot of additional work for that office.

Mr. **Turner**. Mr. Chairman, maybe we could turn to the Regional Director from Boston, MA, who is going to have to wrestle with those problems, Ron Lambertson.

Mr. **Lambertson**. I am right here. In the northeast region of the country, there are over 100 FERC projects coming up for relicensing. Many of these projects were built before the Federal Power Act was passed in 1920, and now their 50- and 60-year licenses are running out.

It is our job to go back to those projects and work with the project owners to come up with a way of relicensing those projects while protecting fish and wildlife resources.

A large number of those projects will be in Maine, but we do have an office in New Hampshire that has historically served the Maine area. We are hoping that the staff in the New Hampshire office would be able to handle the additional workload.

Senator **Reid**. In addition to the reductions noted at these two field offices, the Service is proposing to reduce its specific hydropower relicensing budget by $250,000. Why is this reduction proposed, in light of the fact that there are a number of additional licensing activities, some of which were mentioned by the Director from that area?

Mr. LAMBERTSON. Frankly, Senator, it is going to be difficult to meet the requirements.

FUNDING FOR HYDROPOWER RELICENSING

Senator REID. You don't need to say any more than that. We understand that your budget request to OMB was considerably higher than what you were given for relicensing.

Would you supply for the record, and you can do this at a subsequent time, the description of what additional work would have been done with the $2,035,000 more that you requested from OMB. Specifically, how would the estimated workload accomplishments change and what difference, if any, would these funds make in your program?

Mr. LAMBERTSON. For FERC relicensing, I believe we requested an additional $700,000.

Senator REID. So, if you would furnish us with what additional things you would do with those funds.

Mr. SMITH. Yes; we can.

Senator REID. The question is in addition to the figure that I gave here, the $2,035,000.

Mr. SMITH. We will have to figure out what we will be able to accomplish with $2 million. I know there were some other requests that relate to FERC relicensing, other than the $700,000.

Senator REID. OK. Would you then——

Mr. SMITH. We will clarify it.

[The information follows:]

U.S. Fish and Wildlife Service Relicensing Activities

In its FY 1991 Budget Request to the Office of Management and Budget (OMB) the U.S. Fish and Wildlife Service (Service) requested funding for activities that support the Service's mandated responsibilities with regard to Federal Energy Regulatory Commission (FERC) licenses and exemptions. A summary of these activities and the funding increase requested is presented below.

Activity	FY 1991 Request (Dollars/FTE)
FERC Relicensing	$ 700,000/3 FTE
Ohio River	200,000/1 FTE
Swan Fall	200,000/1 FTE
Warm Water Instream Flow	300,000/0 FTE

FERC Relicensing (+$700,000/3 FTE):

Under the Fish and Wildlife Coordination Act and the Federal Power Act, the Service provides recommendations to FERC for the protection, mitigation and enhancement of fish and wildlife resources for relicensing applications. The applicant is required to submit a completed application two years prior to license expiration and consult with fish and wildlife agencies. In May, 1989, FERC issued regulations concerning relicensing which require the Service to participate in extensive consultation and coordination on relicensing.

The $700,000 requested for FERC relicensing was requested to enable the Service to provide timely consultations with project applicants and FERC on hydropower projects with licenses expiring through 1995. Over 200 licenses will expire during this time period. Each license may include several subprojects, power plants and dams. A list of the projects is attached and is summarized below.

Region	Licenses Expiring through 1995	Number of Subprojects
1	14	21
2	1	2
3	71	86
4	14	19
5	94	135
6	10	12
7	1	3
Total	205	278

Ohio River (+$200,000/1 FTE): Funding was requested to conduct studies on the 16 hydropower projects in the Ohio River Basin in West Virginia, Ohio and Pennsylvania that were licensed by FERC in September, 1989. As conditions to these licenses, FERC ordered the project applicants to work with the Fish and Wildlife Service and other resource agencies to complete studies in three general areas: water quality, fish entrainment/passage and recreation including fish habitat studies. In addition, FERC ordered detailed endangered species studies for three projects. The $200,000 would be used to provide Service input to these studies.

Swan Falls (+$200,000/1 FTE): Congress directed (P.L. 100-216) development and implementation of fish and wildlife studies on the Snake River, Idaho to address effects of the Swan Falls Agreement between the State of Idaho and Idaho Power Company. As provided for in this legislation, the Service is to complete studies to protect, enhance and mitigate fish and wildlife that could be impacted by the modified streamflow regime established in the agreement. The results of the studies will be used to substantiate the water rights claim for the Deer Flat National Wildlife Refuge located downstream from the project. Funding was requested to complete the third year of the three-year study effort and would include study of water quality, fish and wildlife habitat, and instream flow modeling.

Southeastern Instream Flow Methods Development for Warm Water Streams ($300,000): Work was initiated in 1989 at Auburn University, Alabama to develop instream flow methods for warm water streams and rivers. The warm water instream flow methodology, when developed, will incorporate the fish habitat needs into a model that has the predictive capability to determine the effects of alternative flow regimes on warm water fish species. This methodology would assist biologists and engineers in deciding the appropriate water regulations schedules in downstream water releases below hydropower projects and other water control structures.

LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988 - AND 1999 FOR JESSE SHORT
10/12/1988

* RIVER BASIN CODE ***	PROJ. NUMB.	SITE	STATUS	PLANT NAME	STREAM NAME	STATE	EXPI. DATE	OWNER NAME
* 1941760000EA0	1922	A	MO	BEAVER FALLS	BEAVER FALLS CR,GEORGE INLET	AK	950430	KETCHIKAN, CITY OF
* 1941760000MA1	1922	C	MO	UPPER SILVIS	BEAVER FALLS CR,GEORGE INLET	AK	950430	KETCHIKAN, CITY OF
* 1917320000MA0	1432	A	NO	DRY SPRUCE	UNN TRIB,DRY SPRUCE BAY	AK	881026	C W C FISHERIES
* 1941760000KA1	1922	B	MO	LOWER SILVIS(BEAVER FALLS)	BEAVER FALLS CR,GEORGE INLET	AK	950430	KETCHIKAN, CITY OF
* 0390461900PA0	2407	A	MO	YATES	TALLAPOOSA R	AL	931231	ALABAMA POWER CO
* 0390461900EA0	2408	A	MO	THURLOW	TALLAPOOSA R	AL	931231	ALABAMA POWER CO
* 1502425210MA0	2069	A	MO	CHILDS	FOSSIL CR,VERDE R	AZ	941231	ARIZONA PUB SERV CO
* 1502425230RA0	2069	B	MO	IRVING	FOSSIL CR,VERDE R	AZ	941231	ARIZONA PUB SERV CO
* 1826726360NA0	1354	F	MO	BROWNS CREEK	BROWNS CR CNDT(S FK WILLOW CR)	CA	890430	PACIFIC GAS & ELECTRIC CO
* 1826726100MA0	1354	D	MO	SAN JOAQUIN 3	N FK WILLOW CR	CA	890430	PACIFIC GAS & ELECTRIC CO
* 1826723000PA0	1354	C	MO	SAN JOAQUIN 2	WILLOW CR	CA	890430	PACIFIC GAS & ELECTRIC CO
* 1826723000EA0	1354	A	MO	WISHON A G	SAN JOAQUIN R(WILLOW CR)	CA	890430	PACIFIC GAS & ELECTRIC CO
* 1826344000PA1	2019	A	MO	MURPHYS	ANGELS CR, CLOVEY CR	CA	961105	PACIFIC GAS & ELECTRIC CO
* 1826344000MA1	2699	A	NO	ANGELS	ANGELS CR, CLOVEY CR	CA	951231	PACIFIC GAS & ELECTRIC CO
* 1826726300PA0	1354	E	MO	CRANE VALLEY	N FK WILLOW CR	CA	890430	PACIFIC GAS & ELECTRIC CO
* 1824423000MA1	1403	A	MO	NARROWS	YUBA R	CA	910731	PACIFIC GAS & ELECTRIC CO
* 1824850000PA0	2687	A	MO	PIT 1	PIT R	CA	951231	PACIFIC GAS & ELECTRIC CO
* 1826733000CA0	2017	A	MO	BIG CREEK 4	SAN JOAQUIN R	CA	990228	SOUTHERN CALIF EDISON CO
* 1826723000HA0	1354	B	MO	SAN JOAQUIN 1A	WILLOW CR,SAN JOAQUIN R	CA	890430	PACIFIC GAS & ELECTRIC CO
* 1844900000RA0	1933	B	MO	SANTA ANA 1	SANTA ANA R	CA	960430	SOUTHERN CALIF EDISON CO
* 1844900000MA0	1933	A	MO	SANTA ANA 2	SANTA ANA R	CA	960430	SOUTHERN CALIF EDISON CO
* 1844800000RA0	1934	B	MO	MILL CREEK 3	MILL CR,SANTA ANA R	CA	960430	SOUTHERN CALIF EDISON CO
* 1844800000MA0	1934	A	MO	MILL CRK 23	MILL CR,SANTA ANA R	CA	960430	SOUTHERN CALIF EDISON CO
* 1827664000FA0	1333	A	MO	TULE RIVER	N FK M FK TULE R	CA	890430	PACIFIC GAS & ELECTRIC CO
* 1844630000PA0	1932	A	MO	LYTLE CREEK	LYTLE CR, SANTA ANA R	CA	960430	SOUTHERN CALIF EDISON CO
* 1828310000MA0	2290	A	MO	KERN RIVER 3	N FK KERN R	CA	931231	SOUTHERN CALIF EDISON CO
* 1828115000PA0	1930	A	MO	KERN RIVER 1	KERN R	CA	960430	SOUTHERN CALIF EDISON CO

LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988 AND 1999 FOR JESSE SHORT
10/12/1988

* RIVER BASIN CODE	PROJ. NUMB.	SITE	STATUS	PLANT NAME	STREAM NAME	STATE	EXPI. DATE	OWNER NAME
***								
* 1104961000MA0	2275	B	NO	SALIDA 1	ARKANSAS R	CO	931231	PUBLIC SERVICE CO OF CO
* 1104961000JA0	2275	A	NO	SALIDA 2	ARKANSAS R	CO	931231	PUBLIC SERVICE CO OF CO
* 1026696920MA0	2187	A	NO	GEORGETOWN	S CLEAR CR	CO	931231	PUBLIC SERVICE CO OF CO
* 0134810000PA0	2441	A	NO	SECOND STREET	SHETUCKET R	CT	931231	NORWICH, CITY OF
* 0134810000JA0	2508	A	NO	TENTH STREET	SHETUCKET R	CT	931231	NORWICH, CITY OF
* 0342881000MA0	2354	C	MO	TALLULAH FALLS	TALLULAH R	GA	935231	GEORGIA POWER CO
* 0342859300MA0	2354	B	MO	TUGALOO	TUGALOO R	GA	931231	GEORGIA POWER CO
* 0342859100MA0	2354	A	MO	YONAH	TUGALOO R	GA	931231	GEORGIA POWER CO
* 0342179000MA1	2535	A	MO	STEVENS CREEK	SAVANNAH R	GA	931231	SOUTH CAROLINA ELEC & GAS CO
* 0342883000EA0	2354	D	MO	MATHIS & TERRCRA	TALLULAH R	GA	931231	GEORGIA POWER CO
* 0342883000JA0	2354	E	MO	NACOOCHEE	TALLULAH R	GA	931231	GEORGIA POWER CO
* 0342883000PA0	2354	F	MO	BURTON	TALLULAH R	GA	931231	GEORGIA POWER CO
* 0350659000PA0	1951	A	MO	SINCLAIR	OCONEE R	GA	970831	GEORGIA POWER CO
* 0350873000MA0	2336	A	MO	LLOYD SHOALS	OCMULGEE R	GA	931231	GEORGIA POWER CO
* 0378451000PA1	2350	A	NO	RIVERVIEW 5/	CHATTAHOOCHEE R	GA	931231	GEORGIA POWER CO
* 0378453100MA0	2341	A	MO	LANGDALE	CHATTAHOOCHEE R	GA	931231	GEORGIA POWER CO
* 1746759000GA0	2777	B	MO	UPPER SALMON B	SNAKE R	ID	990531	IDAHO POWER CO
* 1770181000MA0	1991	B	MO	MOYIE 1	MOYIE R	ID	980331	BONNERS FERRY, CITY OF
* 1770181000LA0	1991	C	MO	MOYIE 3	MOYIE R	ID	980331	BONNERS FERRY, CITY OF
* 1770181000JA0	1991	A	MO	MOYIE 2	MOYIE R	ID	980331	BONNERS FERRY, CITY OF
* 1746759000EA0	2061	A	MO	LOWER SALMON	SNAKE R	ID	971225	IDAHO POWER CO
* 1746757900JA1	1975	A	MO	BLISS	SNAKE R	ID	980228	IDAHO POWER CO
* 1746777130EA0	2778	A	MO	SHOSHONE FALLS	SNAKE R	ID	990531	IDAHO POWER CO
* 1746759000HA0	2777	A	MO	UPPER SALMON A	SNAKE R	ID	990531	IDAHO POWER CO
* 0730350300MA1	2446	A	MO	DIXON	ROCK R	IL	931231	COMMONWEALTH EDISON CO
* 0730500000MA1	2373	A	NO	ROCKTON	ROCK R	IL	931231	SOUTH BELOIT WO & E CO
* 0444330000JA0	2579	A	MO	TWIN BRANCH	ST JOSEPH R	IN	931231	IN AND MI ELEC CO
* 0505100000NA0	6641	A	MO	SMITHLAND L&D	OHIO R	KY	880531	MARION,CITY OF,ET AL
* 0158233000JA0	2323	A	MO	DEERFIELD 2	DEERFIELD R	MA	931231	NEW ENGLAND POWER CO
* 0138233000PA1	2334	A	MO	GARDNER FALLS	DEERFIELD R	MA	931231	WESTERN MASS ELECTRIC CO
* 0138233000UA1	2323	B	MO	DEERFIELD 3	DEERFIELD R	MA	931231	NEW ENGLAND POWER CO
* 0138251000MA0	2323	C	MO	DEERFIELD 4	DEERFIELD R	MA	931231	NEW ENGLAND POWER CO
* 0138259000JA0	2323	D	MO	DEERFIELD 5	DEERFIELD R	MA	931231	NEW ENGLAND POWER CO
* 0138259000PA1	323	E	MO	SHERMAN	DEERFIELD R	MA	931231	NEW ENGLAND POWER CO
* 0138191100CA1	2004	A	MO	HADLEY FALLS	CONNECTICUT R	MA	990831	HOLYOKE WATER POWER CO
* 0138161000MA1	2608	A	NO	WEST SPRINGFIELD	WESTFIELD R	MA	931231	JAMES RIVER PAPER CO
* 0138310000RA0	2622	A	NO	TURNERS FALLS	CONN CNL(CONN R)	MA	910228	HAMMERMILL PAPER CO
* 0124111000HA0	2927	A	NO	AQUAMAC	S MERRIMACK CNL (MERR R)	MA	990930	AQUAMAC CORP

LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988 AND 1999 FOR JESSE SHORT
10/12/1988

* RIVER BASIN CODE ***	PROJ. NUMB.	SITE	STATUS	PLANT NAME	STREAM NAME	STATE	EXPI. DATE	OWNER NAME
* 0138191500MA0	2775	A	NO	LINWEAVE D	HOLYOKE CNL(CONN R)	MA	910228	LINWEAVE, INC
* 0124111000EA0	2928	A	NO	MERRIMACK	S MERRIMAC CNL(MERR R)	MA	991130	MERRIMACK PAPER CO INC
* 0138191100JA0	2386	A	NO	HOLYOKE 1	HOLYOKE CNL(CONN R)	MA	910228	HOLYOKE,CITY OF
* 0138191100MA0	2387	A	NO	HOLYOKE 2	HOLYOKE CNL(CONN R)	MA	880331	HOLYOKE,CITY OF
* 0138191100NA0	2388	A	NO	HOLYOKE 3	HOLYOKE CNL(CONN R)	MA	900531	HOLYOKE,CITY OF
* 0138191100RA0	2004	B	MO	SKINNER	HOLYOKE CNL(CONN R)	MA	990831	HOLYOKE WATER POWER CO
* 0138191100TA0	2004	C	MO	BOATLOCK STATION	HOLYOKE CNL(CONN R)	MA	990831	HOLYOKE WATER POWER CO
* 0138191300CA0	2004	F	MO	CHEMICAL (HOLYOKE)	HOLYOKE CNL(CONN R)	MA	990831	HOLYOKE WATER POWER CO
* 0138191300EA0	2768	A	NO	ALBIN MILL A	HOLYOKE CNL(CONN R)	MA	910228	LINWEAVE, INC
* 0138191300HA0	2004	D	MO	RIVERSIDE	HOLYOKE CNL(CONN R)	MA	990831	HOLYOKE WATER POWER CO
* 0138191300MA0	2497	A	NO.	MT TOM MILL	HOLYOKE CNL(CONN R)	MA	910228	LINWEAVE, INC
* 0138191300PA0	2004	E	MO	BEEBEE HOLBROOK	HOLYOKE CNL(CONN R)	MA	990831	HOLYOKE WATER POWER CO
* 0138191500CA0	2772	A	NO	LINWEAVE A	HOLYOKE CNL(CONN R)	MA	910228	LINWEAVE, INC
* 0138191500EA0	2771	A	NO	NONOTUCK	HOLYOKE CNL(CONN R)	MA	910228	LINWEAVE, INC
* 0138191100EA1	2758	A	NO	CROCKER MILL	HOLYOKE CNL(CONN R)	MA	910228	LINWEAVE,INC
* 0138191500JA0	2770	A	NO	CROCKER MILL C	HOLYOKE CNL(CONN R)	MA	910228	LINWEAVE, INC
* 0138191500HA0	2766	A	NO	ALBIN MILL D	HOLYOKE CNL(CONN R)	MA	910228	LINWEAVE, INC
* 0596260000MA0	2370	A	MO	DEEP CREEK	DEEP CR,YOUGHIOGHENY R	MD	931231	PENN ELEC CO
* 0112320000VA1	2559	A	MO	OAKLAND(MESALONSK 2)	MESSALONSKEE STR,KENNEBEC R	ME	931231	CENTRAL MAINE POWER CO
* 0112320000PA1	2557	A	MO	RICE RIPS(MESALONSK 3)	MESSALONSKEE STR,KENNEBEC R	ME	931231	CENTRAL MAINE POWER CO
* 0112320000JA1	2555	A	NO	AUTOMATIC(MESALONSK 4)	MESSALONSKEE STR,KENNEBEC R	ME	931231	CENTRAL MAINE POWER CO
* 0112320000EA1	2556	A	NO	UNION GAS(MESALONSK 5)	MESSALONSKEE STR,KENNEBEC R	ME	931231	CENTRAL MAINE POWER CO
* 0112231000MA1	2552	A	MO	FORT HALIFAX	SEBASTICOOK R	ME	931231	CENTRAL MAINE POWER CO
* 0112150000PA0	2389	A	MO	EDWARDS DIVISION	KENNEBEC R	ME	931231	EDWARDS MANUFCTRNG CO INC
* 0110837000PA1	2572	A	MO	RIPOGENUS	W BR PENOBSCOT R	ME	931231	GREAT NORTHERN NEKOOSA CO
* 0110833000PA1	2458	D	MO	NORTH TWIN	W BR PENOBSCOT R	ME	931231	GREAT NORTHERN NEKOOSA CO

LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988 AND 1999 FOR JESSE SHORT
10/12/1988

* RIVER BASIN CODE ***	PROJ. NUMB.	SITE	STATUS	PLANT NAME	STREAM NAME	STATE	EXPI. DATE	OWNER NAME
* 0110833000JA0	2458	A	MO	MILLINOCKET	W BR PENOBSCOT R	ME	931231	GREAT NORTHERN NEKOOSA CO
* 0110832000MA0	2458	E	MO	MILLINOCKET DAM	MILLINOCKET STR ,W BR PENOBSCOT R	ME	931231	GREAT NORTHERN NEKOOSA CO
* 0110831000PA1	2458	B	MO	DOLBY	W BR PENOBSCOT R	ME	931231	GREAT NORTHERN NEKOOSA CO
* 0110831000JA1	2458	C	MO	EAST MILLINOCKET	W BR PENOBSCOT R	ME	931231	GREAT NORTHERN NEKOOSA CO
* 0110831000EA1	2666	A	MO	MEDWAY	W BR PENOBSCOT R	ME	990330	BANGOR HYDRO ELECTRIC CO
* 0110313000PA1	2534	A	MO	MILFORD	PENOBSCOT R	ME	901231	BANGOR HYDRO ELECTRIC CO
* 0110312000PA1	2712	A	MO	STILLWATER	STILLWATER R	ME	931231	BANGOR HYDRO ELECTRIC CO
* 0102292000MA0	2366	A	NO	MILLINOCKET LAKE	MILLINOCKET STR ,MILLINOCKET LK	ME	920630	MAINE PUBLIC SERVICE CO
* 0102254000MA1	2368	A	NO	SQUA PAN	SQUA PAN STR,SQUA PAN LK	ME	901231	MAINE PUBLIC SERVICE CO
* 0114190000LA0	2283	B	MO	ANDROSCOGGIN NO 3	ANDROSCOGGIN R	ME	931231	CENTRAL MAINE POWER CO
* 0114330000LA0	2375	B	MO	JAY	ANDROSCOGGIN R	ME	990930	INTERNATIONAL PAPER CO
* 0114330000RA0	2375	C	MO	RILEY MILL	ANDROSCOGGIN R	ME	990930	INTERNATIONAL PAPER CO
* 0114330000JA1	8277	A	MO	OTIS MILL	ANDROSCOGGIN R	ME	990930	OTIS HYDROELECTRIC CO
* 0114390000PA0	2333	A	MO	RUMFORD FALLS LWR	ANDROSCOGGIN R	ME	931231	RUMFORD FALLS POWER CO
* 0114390000UA1	2333	B	MO	RUMFORD FALLS UPR	ANDROSCOGGIN R	ME	931231	RUMFORD FALLS POWER CO
* 0116300000PA1	2897	A	NO	SACCARAPPA(WESTBROOK 2)	PRESUMPSCOT R	ME	990930	S D WARREN CO
* 0116700000PA0	2519	A	MO	NORTH GORHAM	PRESUMPSCOT R	ME	931231	CENTRAL MAINE POWER CO
* 0118130000JA1	2527	A	MO	SKELTON	SACO R	ME	931231	CENTRAL MAINE POWER CO
* 0118150000UA1	2529	A	MO	BONNY EAGLE	SACO R	ME	931231	CENTRAL MAINE POWER CO
* 0114330000EA0	2375	A	MO	LIVERMORE MILL	ANDROSCOGGIN R	ME	990930	INTERNATIONAL PAPER CO
* 0114190000MA1	2283	C	MO	GULF ISLAND	ANDROSCOGGIN R	ME	931231	CENTRAL MAINE POWER CO
* 0114190000KA1	2283	A	MO	DEER RIPS	ANDROSCOGGIN R	ME	931231	CENTRAL MAINE POWER CO
* 0112841000MA1	2615	A	MO	BRASSUA	MOOSE R	ME	931231	CENTRAL MAINE POWER CO ET AL
* 0112810000PA1	2671	A	NO	MOOSEHEAD LAKE	KENNEBEC R	ME	931231	KENNEBEC WTR PWR CO
* 0112720000PA1	2613	A	MO	MOXIE	LAKE MOXIE	ME	931231	MILSTAR MANUF CORP ET AL
* 0112630000MA1	2612	A	MO	FLAGSTAFF	DEAD R	ME	971231	CENTRAL MAINE POWER CO

LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988 AND 1999 FOR JESSE SHORT
10/12/1988

* RIVER BASIN CODE ***	PROJ. NUMB.	SITE	STATUS	PLANT NAME	STREAM NAME	STATE	EXPI. DATE	OWNER NAME
* 0112551000MA1	2329	A	MO	HYMAN	KENNEBEC R	ME	931231	CENTRAL MAINE POWER CO
* 0112390000MA0	2325	A	MO	WESTON	KENNEBEC R	ME	931231	CENTRAL MAINE POWER CO
* 0102233000MA1	2367	A	NO	CARIBOU	AROOSTOOK R	ME	931231	MAINE PUBLIC SERVICE CO
* 0449610000KA0	2506	B	MO	ESCANABA 3	ESCANABA R	MI	931231	MEAD CORP
* 0449610000EA0	2506	A	MO	ESCANABA 1	ESCANABA R	MI	931231	MEAD CORP
* 0448610000MA0	2431	A	MO	BRULE ISLAND	BRULE R	MI	931231	WISCONSIN ELEC PWR CO
* 0448550000RA1	1980	B	MO	BIG QUINNESEC FALLS	MENOMINEE R	MI	980228	WISCONSIN ELEC PWR CO
* 0448550000PA0	1980	A	MO	QUINNESEC FALLS	MENOMINEE R	MI	980228	WISCONSIN ELEC PWR CO
* 0436110000HA0	2436	A	MO	FOOTE	AU SABLE R	MI	931231	CONSUMERS POWER CO
* 0449610000PA0	2506	C	MO	ESCANABA 4	ESCANABA R	MI	931231	MEAD CORP
* 0458230000EA0	2402	A	MO	PRICKETT	STURGEON R	MI	931231	UPPER PENINSULA PWR CO
* 0459821000JA0	1864	A	MO	VICTORIA	W BR ONTONAGON R	MI	881231	UPPER PENINSULA PWR CO
* 0459822700MA0	1864	B	MO	CISCO	S BR ONTONAGON R	MI	881231	UPPER PENINSULA PWR CO
* 0459823000MA0	1864	C	MO	BERGLAND	W BR ONTONAGON R	MI	881231	UPPER PENINSULA PWR CO
* 0459845000MA0	1864	D	MO	BOND FALLS	M BR ONTONAGON R	MI	881231	UPPER PENINSULA PWR CO
* 0461410000HA1	2587	A	NO	SUPERIOR FALLS	MONTREAL R	MI	931231	NORTHERN STATES POWER CO
* 0461410000MA1	2610	A	NO	SAXON FALLS	MONTREAL R	MI	891231	NORTHERN STATE PWR CO
* 0448300000MA0	2433	A	MO	GRAND RAPIDS	MENOMINEE R	MI	931231	WISCONSIN PUBLIC SERVICE CORP
* 0448543000MA1	2471	A	NO	STURGEON RIVER	STURGEON R	MI	931231	WISCONSIN ELEC PWR CO
* 0441833000MA0	2451	A	MO	ROGERS	MUSKEGON R	MI	931231	CONSUMERS POWER CO
* 0444170000MA0	2551	A	MO	BUCHANAN	ST JOSEPH R	MI	931231	IN AND MI ELEC CO
* 0441831000MA1	2452	A	MO	HARDY	MUSKEGON R	MI	931231	CONSUMERS POWER CO
* 0441819000MA1	2468	A	MO	CROTON	MUSKEGON R	MI	931231	CONSUMERS POWER CO
* 0441433000HA0	2599	A	MO	HODENPYL	MANISTEE R	MI	931231	CONSUMERS POWER CO
* 0441417000MA0	2580	A	MO	TIPPY	MANISTEE R	MI	931231	CONSUMERS POWER CO
* 0438700000MA0	2419	A	NO	HILLMAN	THUNDER BAY R	MI	931231	ALPENA PWR CO
* 0438600000MA0	2404	E	MO	UPPER SOUTH DAM	UPPER S BR THUNDER BAY R	MI	931231	ALPENA PWR CO
* 0438230000MA0	2404	D	MO	HUBBARD LAKE	LOWER S BR THUNDER BAY R	MI	931231	ALPENA PWR CO
* 0438100000PA0	2404	C	MO	NORWAY POINT	THUNDER BAY R	MI	931231	ALPENA PWR CO
* 0438100000JA1	2404	B	MO	FOUR MILE DAM	THUNDER BAY R	MI	931231	ALPENA PWR CO
* 0438100000EA0	2404	A	MO	NINTH STREET	THUNDER BAY R	MI	931231	ALPENA PWR CO
* 0436170000MA0	2448	A	MO	MIO	AU SABLE R	MI	931231	CONSUMERS POWER CO
* 0436150000JA1	2447	A	MO	ALCONA	AU SABLE R	MI	931231	CONSUMERS POWER CO
* 0436110000PA0	2449	A	MO	LOUD	AU SABLE R	MI	931231	CONSUMERS POWER CO
* 0436110000MA0	2453	A	MO	FIVE CHANNELS	AU SABLE R	MI	931231	CONSUMERS POWER CO

```
            LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988        AND 1999  FOR JESSE SHORT
                                                         10/12/1988
* RIVER BASIN CODE  PROJ. SITE   STATUS   PLANT NAME            STREAM NAME         STATE   EXPI.    OWNER NAME
                    NUMB.                                                                   DATE
***
* 0436110000JA0      2450 A       MO      COOKE                 AU SABLE R           MI     931231   CONSUMERS POWER CO
* 0448511000GA0      2357 A       MO      WHITE RAPIDS          MENOMINEE R          MI     931231   WISCONSIN ELEC PWR C
                                                                                                     O
* 0448511000JA1      2394 A       MO      CHALK HILL            MENOMINEE R          MI     930630   WISCONSIN ELEC PWR C
                                                                                                     O
* 0464150000JA1      2363 A       MO      CLOQUET               ST LOUIS R           MN     931231   POTLATCH CORP
* 0464150000PA0      2360 D       MO      KNIFE FALLS           ST LOUIS R           MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0464470000MA0      2360 I       MO      WHITEFACE             WHITEFACE R          MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0464240000MA0      2360 H       MO      BOULDER LAKE          OTTER R              MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0464230000MA1      2360 G       MO      ISLAND LAKE           CLOQUET R            MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0464220000HA0      2360 F       MO      RICE LAKE             BEAVER R             MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0464220000EA0      2360 E       MO      FISH LAKE             BEAVER R             MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0464110000HA1      2360 A       MO      FOND DU LAC           ST LOUIS R           MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0     10000MA1     2360 B       MO      THOMPSON              ST LOUIS R           MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 04    50000EA0     2360 C       MO      SCANLON               ST LOUIS R           MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0795[illegible]00000MA1      2362 A       MO      GRAND RAPIDS          MISSISSIPPI R        MN     931231   BLANDIN PAPER CO
* 0795200000MA0      2361 A       NO      PRAIRIE RIVER         PRAIRIE R            MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0791100000RA1      2533 A       MO      BRAINERD              MISSISSIPPI R        MN     931231   POTLATCH CORP, NW PP
                                                                                                     R
* 0790130000MA0      2663 A       MO      PILLAGER              CROW WING R          MN     970511   MINNESOTA PWR AND LT
                                                                                                      CO
* 0790110000MA1      2454 A       MO      SYLVAN                CROW WING R          MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0787700000PA0      2532 B       MO      LITTLE FALLS 2        MISSISSIPPI R        MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 0787700000MA0      2532 A       MO      LITTLE FALLS 1        MISSISSIPPI R        MN     931231   MINNESOTA PWR AND LT
                                                                                                      CO
* 1106953000MA0      2221 A       MO      OZARK BEACH           WHITE R              MO     930831   EMPIRE DIST ELEC CO
* 1004235000MA0      2561 A       MO      NIANGUA               NIANGUA R            MO     931231   SHO ME POWER CORP
* 1095310000MA1      2188 F       MO      HOLTER                MISSOURI R           MT     981130   MONTANA POWER CO
* 1089300000WA1      2188 E       MO      BLACK EAGLE           MISSOURI R           MT     981130   MONTANA POWER CO
* 1095370000MA1      2188 G       MO      HAUSER LAKE           MISSOURI R           MT     981130   MONTANA POWER CO
* 1089300000JA1      2188 C       MO      COCHRANE              MISSOURI R           MT     981130   MONTANA POWER CO
* 1089300000EA1      2188 B       MO      RYAN                  MISSOURI R           MT     981130   MONTANA POWER CO
* 1089100000MA1      2188 A       MO      MORONY                MISSOURI R           MT     981130   MONTANA POWER CO
* 1096117000HA0      2188 H       MO      MADISON 2 5/          MADISON R            MT     981130   MONTANA POWER CO
* 1768694700MA0      1473 A       MO      FLINT CREEK           FLINT CR,CLARK       MT     880630   MONTANA POWER CO
                                                                FK
* 1768673000MA0      2543 A       MO      MILLTOWN              CLARK FK,PEND O      MT     931231   MONTANA POWER CO
                                                                REILLE R
* 1096750000PA1      2188 I       MO      HEBGEN                MADISON R            MT     981130   MONTANA POWER CO
* 1089300000PA1      2188 D       MO      RAINBOW               MISSOURI R           MT     981130   MONTANA POWER CO
```

LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988 AND 1999 FOR JESSE SHORT
10/12/1988

* RIVER BASIN CODE	PROJ. NUMB.	SITE	STATUS	PLANT NAME	STREAM NAME	STATE	EXPI. DATE	OWNER NAME
***								
* 0332286100MA0	2607	A	NO	SPENCER MOUNTAIN	S FK CATAWBA R	NC	931231	DUKE POWER CO
* 0658974000JA0	2541	A	NO	CASCADE (BREVARD)	LITTLE R	NC	931231	CASCADE POWER CO
* 0114571000JA0	2300	A	MO	SHELBURNE	ANDROSCOGGIN R	NH	931231	BROWN-NH INC
* 0114571000PA0	2288	A	MO	GORHAM	ANDROSCOGGIN R	NH	931231	PUBLIC SERVICE CO OF NH
* 0114573000MA1	2311	A	MO	GORHAM	ANDROSCOGGIN R	NH	931231	JAMES R-NH ELEC,INC
* 0114575000JA0	2327	A	MO	CASCADE	ANDROSCOGGIN R	NH	931231	JAMES R-NH ELEC,INC
* 0114575000MA0	2326	A	MO	CROSS	ANDROSCOGGIN R	NH	931231	JAMES R-NH ELEC,INC
* 0114575000PA1	2287	A	MO	J BRODIE SMITH	ANDROSCOGGIN R	NH	931231	PUBLIC SERVICE CO OF NH
* 0114575000RA1	2423	A	MO	RIVERSIDE	ANDROSCOGGIN R	NH	931231	JAMES R-NH ELEC,INC
* 0114575000UA0	2422	A	MO	SAWMILL	ANDROSCOGGIN R	NH	931231	JAMES R-NH ELEC,INC
* 0138913000MA0	2392	A	MO	GILMAN(CONN R)	CONNECTICUT R	NH	901231	GEORGIA-PACIFIC CORP
* 0124851000MA0	2456	A	MO	AYERS ISLAND	PEMIGEWASSET R	NH	931231	PUBLIC SERVICE CO OF NH
* 1636200000MA0	1746	A	NO	LEIDY CR (CIRCLE L)	LEIDY CR	NV	910930	FOUR RENT INC
* 0208411000HA1	2539	A	MO	SCHOOL ST	MOHAWK R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0208550000JA1	6032	A	MO	MECHANICVILLE	HUDSON R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0208761100MA1	2318	A	MO	E J WEST	SACANDAGA R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0208757000JA1	2482	E	MO	SPIER FALLS	HUDSON R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0208757000EA1	2482	D	MO	SHERMAN ISLAND	HUDSON R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0408500100HA1	2330	A	MO	RAYMONDVILLE	RAQUETTE R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0208755500UA1	2554	A	MO	FEEDER DAM	HUDSON R	NY	931231	MOREAU MANUFACTURING CORP
* 0208755500RA0	2385	A	MO	GLENS FALLS	HUDSON R	NY	931231	FINCH PRUYN AND CO
* 0208650000MA0	2487	A	NO	HOOSIC FALLS	HOOSIC R	NY	931231	HYDRO-POWER INC
* 0208630100MA1	2616	B	MO	JOHNSONVILLE	HOOSIC R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0208610000MA0	2616	A	MO	SCHAGHTICOKE	HOOSIC R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414410000MA0	2645	B	MO	BELFORT	BEAVER R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414410000JA0	2645	A	MO	HIGH FALLS	BEAVER R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414150000JA1	2569	E	MO	HERRINGS	BLACK R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414150000HA1	2569	D	MO	DEFERIET	BLACK R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414130000YA1	2569	C	MO	KAMARGO	BLACK R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414130000KA1	2569	B	MO	BLACK RIVER	BLACK R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414130000CA1	2442	A	MO	WATERTOWN	BLACK R	NY	931231	WATERTOWN,CITY OF
* 0414110000RA1	2569	A	MO	SEWALLS ISLAND	BLACK R	NY	931231	NIAGARA MOHAWK PWR CORP

LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988 AND 1999 FOR JESSE SHORT
10/12/1988

* RIVER BASIN CODE	PROJ. NUMB.	SITE	STATUS	PLANT NAME	STREAM NAME	STATE	EXPI. DATE	OWNER NAME
***								
* 0414110000LA0	2538	A	MO	BEEBEE ISLAND	BLACK R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0408500500RA1	2320	D	MO	HIGLEY	RAQUETTE R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0408500500PA1	2320	C	MO	COLTON	RAQUETTE R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0408500500MA1	2320	B	MO	HANNAWA	RAQUETTE R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0408500500JA1	2320	A	MO	SUGAR ISLAND	RAQUETTE R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0408500100SA1	2330	D	MO	NORWOOD	RAQUETTE R	NY	931231	POTSDAM PAPER CORP
* 0416110000DA1	2474	A	MO	VARICK	OSWEGO R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414410000PA1	2645	C	MO	TAYLORVILLE	BEAVER R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0418130000PA1	2584	A	MO	STATION 26	GENESEE R	NY	931231	ROCHESTER GAS & ELEC CORP
* 0418130000MA0	2583	A	MO	STATION 5	GENESEE R	NY	931231	ROCHESTER GAS & ELEC CORP
* 0418130000JA2	2582	B	MO	STATION 2	GENESEE R	NY	931231	ROCHESTER GAS & ELEC CORP
* 0418130000JA1	2582	A	MO	STATION 2	GENESEE R	NY	931231	ROCHESTER GAS & ELEC CORP
* 0418120000MA0	2424	A	MO	HYDRAULIC RACE	BARGE CNL(GENESEE R)	NY	910630	NIAGARA MOHAWK PWR CORP
* 0416493300MA1	2438	B	MO	WATERLOO(LOCK 4)	SENECA CNL (SENECA R)	NY	931231	N Y ST ELEC & GAS CORP
* 0416493100MA1	2438	A	MO	SENECA FALLS(LOCK 3)	SENECA CNL(SENECA R)	NY	931231	N Y ST ELEC & GAS CORP
* 0418710000JA1	2596	A	NO	STATION 160	GENESEE R	NY	931231	ROCHESTER GAS & ELEC CORP
* 0416130000DA1	2474	C	MO	FULTON	OSWEGO R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0416110000JA1	2474	B	MO	MINETTO	OSWEGO R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414430000MA1	2645	H	MO	MOSHIER	BEAVER R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414430000HA1	2645	G	MO	EAGLE	BEAVER R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414410000HA0	2645	F	MO	SOFT MAPLE	BEAVER R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414410000UA0	2645	E	MO	EFFLEY	BEAVER R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0414410000RA1	2645	D	MO	ELMER	BEAVER R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0408500100MA1	2330	C	MO	EAST NORFOLK	RAQUETTE R	NY	931231	NIAGARA MOHAWK PWR CORP
* 0408500100KA1	2330	B	MO	NORFOLK	RAQUETTE R	NY	931231	NIAGARA MOHAWK PWR CORP
* 1104419100MA1	1494	A	MO	PENSACOLA	NEOSHO R	OK	881231	GRAND RIVER DAM AUTH
* 1790681000MA0	1927	E	MO	CLEARWATER 2	CLEARWATER R	OR	970129	PACIFIC POWER & LIGHT CO

LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988 AND 1999 FOR JESSE SHORT
10/12/1988

* RIVER BASIN CODE ***	PROJ. NUMB.	SITE	STATUS	PLANT NAME	STREAM NAME	STATE	EXPI. DATE	OWNER NAME
* 1790681000QA0	1927	F	MO	CLEARWATER 1	CLEARWATER R	OR	970129	PACIFIC POWER & LIGHT CO
* 1790677000JA0	1927	D	MO	TOKETEE	N UMPQUA R	OR	970129	PACIFIC POWER & LIGHT CO
* 1790675000PA0	1927	C	MO	FISH CREEK	N UMPQUA R	OR	970129	PACIFIC POWER & LIGHT CO
* 1790691000PA0	1927	H	MO	LEMOLO 1	N UMPQUA R	OR	970129	PACIFIC POWER & LIGHT CO
* 1790675000MA0	1927	B	MO	SLIDE CREEK	N UMPQUA R	OR	970129	PACIFIC POWER & LIGHT CO
* 1790671000PA0	1927	A	MO	SODA SPRINGS	N UMPQUA R	OR	970129	PACIFIC POWER & LIGHT CO
* 1790691000MA0	1927	G	MO	LEMOLO 2	N UMPQUA R	OR	970129	PACIFIC POWER & LIGHT CO
* 1792800000MA1	2337	A	MO	PROSPECT 3	S FK ROGUE R	OR	881231	PACIFIC POWER & LIGHT CO
* 1746545800MA0	1986	A	NO	ROCK CREEK	ROCK CR,POWDER R	OR	960629	CP NATIONAL CORP
* 1736950000MA0	2643	A	MO	BEND	DESCHUTES R	OR	931231	PACIFIC POWER & LIGHT CO
* 1726433000PA1	2496	A	MO	LEABURG	MCKENZIE R	OR	931231	EUGENE, CITY OF
* 1726433000WA0	2510	A	MO	WALTERVILLE	MCKENZIE R	OR	931231	EUGENE, CITY OF
* 0332425300MA1	2315	A	MO	NEAL SHOALS 5/	BROAD R	SC	931231	SOUTH CAROLINA ELEC & GAS CO
* 0332445900MA1	2406	A	MO	SALUDA	SALUDA R	SC	931231	DUKE POWER CO
* 0332445300MA1	2465	A	MO	HOLIDAYS BRIDGE	SALUDA R	SC	931231	DUKE POWER CO
* 0332427500PA1	2332	A	MO	GASTON SHOALS	BROAD R	SC	931231	DUKE POWER CO
* 0332427300MA1	2331	A	MO	99 ISLANDS	BROAD R	SC	931231	DUKE POWER CO
* 1311130000MA0	1952	A	MO	EAGLE PASS	MAVERICK CNL,RIO GRANDE	TX	960630	MAVERICK CO WTR DST
* 1218775000MA0	1490	A	MO	MORRIS SHEPPARD	BRAZOS R	TX	880524	BRAZOS RIVER AUTH
* 1410446200LA0	1773	A	MO	YELLOWSTONE	YELLOWSTONE R	UT	930331	MOON LAKE ELEC ASSN, INC
* 1697291000WA0	1858	A	MO	BEAVER UPPER(NO 1)	BEAVER R	UT	930730	BEAVER, CITY OF
* 1682231000MA1	2420	A	MO	CUTLER	BEAR R	UT	931231	UTAH POWER AND LIGHT CO
* 1682624560MA0	1994	A	MO	SNAKE CREEK	SNAKE CR	UT	980630	HEBER LT & PWR CO
* 1698253200MA0	1517	A	NO	MONROE UPPER	MONROE CR,SEVIER R	UT	900630	MONROE CITY CORP
* 1682625200JA0	1715	A	NO	SPRING CREEK	SPRING CR,HOBBLE CR,UTAH LK	UT	910622	SPRINGVILLE,CITY OF
* 0246441500PA1	2509	A	NO	SHENANDOAH	S FK SHENANDOAH R	VA	931231	POTOMAC EDISON CO
* 0252777100QA1	2376	A	MO	REUSENS	JAMES R	VA	931231	APPALACHIAN POWER CO
* 0316479100PA1	2411	A	MO	SCHOOLFIELD	DAN R	VA	931231	DAN RIVER MILLS INC
* 0316951000MA0	2466	A	MO	NIAGARA	ROANOKE R	VA	931231	APPALACHIAN POWER CO
* 0246441300MA1	2425	A	MO	LURAY	S FK SHENANDOAH R	VA	931231	POTOMAC EDISON CO
* 0246441500WA1	2425	B	MO	NEWPORT	S FK SHENANDOAH R	VA	931231	POTOMAC EDISON CO
* 0246419100MA1	2391	A	NO	WARREN	SHENANDOAH R	VA	931231	POTOMAC EDISON CO
* 0572895100JA0	2514	A	MO	BUCK	NEW R	VA	931231	APPALACHIAN POWER CO

```
            LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988        AND 1999  FOR JESSE SHORT
                                                        10/12/1988

* RIVER BASIN CODE  PROJ. SITE   STATUS   PLANT NAME               STREAM NAME         STATE   EXPI.      OWNER NAME
                    NUMB.                                                                      DATE
***
* 0572895100MA0      2514 B       MO      BYLLESBY 2               NEW R               VA      931231     APPALACHIAN POWER CO
* 0138270000MA1      2323 F       MO      HARRIMAN                 DEERFIELD R         VT      931231     NEW ENGLAND POWER CO
* 0202252300MA1      2674 A       MO      VERGENNES 9 & 9B         OTTER CR            VT      990531     GREEN MOUNTAIN PWR C
                                                                                                          ORP
* 0138291000MA1      2323 G       MO      SEARSBURG                DEERFIELD R         VT      931231     NEW ENGLAND POWER CO
* 0150200200HA0      2306 D       MO      ECHO DAM                 ECHO POND OUT,C     VT      931231     CITIZENS UTILITIES C
                                                                   LYDE R                                 O
* 0150200400MA0      2306 E       MO      SEYMOUR DAM              SEYMOUR LAKE OU     VT      931231     CITIZENS UTILITIES C
                                                                   T,CLYDE R                              O
* 0202241300MA1      2513 A       MO      ESSEX 19                 WINOOSKI R          VT      931231     GREEN MOUNTAIN PWR C
                                                                                                          ORP
* 0150200100MA1      2306 C       MO      W CHARLESTON             CLYDE R             VT      931231     CITIZENS UTILITIES C
                                                                                                          O
* 0202252910MA0      2445 A       NO      CENTER RUTLAND           OTTER CR            VT      931231     VERMONT MARBLE CO
* 0150200100JA1      2306 B       MO      NEWPORT 1                CLYDE R             VT      931231     CITIZENS UTILITIES C
                                                                                                          O
* 0150200100HA1      2306 A       MO      NEWPORT 2                CLYDE R             VT      931231     CITIZENS UTILITIES C
                                                                                                          O
* 0138850000PA0      2396 A       MO      PIERCE MILLS             PASSUMPSIC R        VT      931231     CENTRAL VT PUB SERV
                                                                                                          CORP
* 0138850000JA0      2399 A       NO      ARNOLD FALLS             PASSUMPSIC R        VT      931231     CENTRAL VT PUB SERV
                                                                                                          CORP
* 0138833000PA0      2397 A       NO      GAGE                     PASSUMPSIC R        VT      931231     CENTRAL VT PUB SERV
                                                                                                          CORP
* 0138831000JA1      2400 A       NO      PASSUMPSIC               PASSUMPSIC R        VT      931231     CENTRAL VT PUB SERV
                                                                                                          CORP
* 0138561000RA1      2490 A       NO      TAFTSVILLE               OTTAUQUECHEE R      VT      931231     CENTRAL VT PUB SERV
                                                                                                          CORP
* 0138527000MA1      2489 A       NO      CAVENDISH                BLACK R             VT      931231     CENTRAL VT PUB SERV
                                                                                                          CORP
* 0138292000MA1      2323 H       MO      SOMERSET                 E BR DEERFIELD      VT      931231     NEW ENGLAND POWER CO
                                                                   R
* 1764100000MA1      2544 A       NO      MEYERS FALLS             COLVILLE R          WA      931231     WASHINGTON WTR PWR C
                                                                                                          O
* 1730100000JA0      2342 A       MO      CONDIT                   WHITE SALMON R      WA      931231     PACIFIC POWER & LIGH
                                                                                                          T CO
* 1706437000PA0      2493 B       MO      SNOQUALMIE FLS 1         SNOQUALMIE R        WA      931231     PUGET SOUND PWR AND
                                                                                                          LT CO
* 1710700000PA1      1862 B       MO      ALDER                    NISQUALLY R         WA      931231     TACOMA, CITY OF
* 1710700000MA1      1862 A       MO      LA GRANDE                NISQUALLY R         WA      931231     TACOMA, CITY OF
* 1704560000MA1      2705 A       MO      NEWHALEM CREEK           NEWHALEM CR,SKA     WA      941231     SEATTLE, CITY OF
                                                                   GIT R
* 1706437000MA0      2493 A       MO      SNOQUALMIE FLS 2         SNOQUALMIE R        WA      931231     PUGET SOUND PWR AND
                                                                                                          LT CO
* 0746799000MA1      2212 A       MO      ROTHSCHILD               WISCONSIN R         WI      930731     WEYERHAEUSER CO
* 0746753000MA1      1953 A       MO      DU BAY                   WISCONSIN R         WI      910630     CONSOLIDATED WATER P
                                                                                                          WR CO
* 0746751000JA1      2590 A       MO      WISCONSIN R DIV          WISCONSIN R         WI      930630     CONSOLIDATED WATER P
                                                                                                          WR CO
* 0746730000MA1      1967 A       NO      WHITING PLOVER           WISCONSIN R         WI      900630     KIMBERLY CLARK CORP
* 0746913000CA1      1999 A       MO      WAUSAU                   WISCONSIN R         WI      950630     WISCONSIN PUBLIC SER
                                                                                                          VICE CORP
```

```
                LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988        AND 1999  FOR JESSE SHORT
                                                           10/12/1988

* RIVER BASIN CODE  PROJ. SITE   STATUS   PLANT NAME                STREAM NAME        STATE   EXPI.     OWNER NAME
                    NUMB.                                                                      DATE
***
* 0746719000MA1      2256 A       MO      WIS RPDS 1                WISCONSIN R         WI      930731    CONSOLIDATED WATER P
                                                                                                          WR CO
* 0746719000JA1      2255 A       MO      CENTRALIA                 WISCONSIN R         WI      930731    NEKOOSA PAPERS INC
* 0746717000PA1      2291 A       MO      PORT EDWARDS              WISCONSIN R         WI      930731    NEKOOSA PAPERS INC
* 0746717000MA1      2292 A       MO      NEKOOSA                   WISCONSIN R         WI      930731    NEKOOSA PAPERS INC
* 0746961000MA0      2476 A       NO      JERSEY                    TOMAHAWK R          WI      931231    WISCONSIN PUBLIC SER
                                                                                                          VICE CORP
* 0772831000MA0      2711 A       NO      TREGO                     NAMEKAGON R         WI      930331    NORTHERN STATES POWE
                                                                                                          R CO
* 0766650000RA0      2640 A       NO      UPPER HYDRO               N FK FLAMBEAU R     WI      931231    FLAMBEAU PAPER CORP
* 0766650000PA0      2421 A       NO      LOWER HYDRO               N FK FLAMBEAU R     WI      931231    FLAMBEAU PAPER CORP
* 0766650000MA0      2395 A       NO      PIXLEY                    N FK FLAMBEAU R     WI      931231    FLAMBEAU PAPER CORP
* 0766650000JA0      2473 A       NO      CROWLEY RAPIDS            N FK FLAMBEAU R     WI      931231    FLAMBEAU PAPER CORP
* 0766610000UA1      2390 A       MO      BIG FALLS                 FLAMBEAU R          WI      931231    NORTHERN STATES POWE
                                                                                                          R CO
* 0766610000MA0      2475 A       NO      THORNAPPLE                FLAMBEAU R          WI      931231    NORTHERN STATES POWE
                                                                                                          R CO
* 0766350000MA1      1982 A       MO      HOLCOMBE                  CHIPPEWA R          WI      980630    NORTHERN STATES POWE
                                                                                                          R CO
* 0766370000PA1      2440 A       MO      CHIPPEWA FALLS            CHIPPEWA R          WI      931231    NORTHERN STATES POWE
                                                                                                          R CO
* 0746997000MA0      2113 A       MO      WISCONSIN HEADWATERS      WISCONSIN R         WI      930731    WISCONSIN VALLEY IMP
                                                                                                          ROVEMENT CO
* 0746995000MA0      1957 A       NO      OTTER RAPIDS              WISCONSIN R         WI      900630    WISCONSIN PUBLIC SER
                                                                                                          VICE CORP
* 0746970000MA1      2239 A       MO      KINUS                     WISCONSIN R         WI      930731    TOMAHAWK PWR & PULP
                                                                                                          CO
* 0746715000JA0      1984 B       MO      PETENWELL                 WISCONSIN R         WI      980131    WISCONSIN RIVER POWE
                                                                                                          R CO
* 0446110000JA1      2677 A       MO      RAPID CROCHE              FOX R               WI      881031    KAUKAUNA,CITY OF
* 0446130000BA1      1510 A       MO      KAUKAUNA (LOWER)          FOX R               WI      890331    KAUKAUNA,CITY OF
* 0446130000DA1      2677 B       MO      BADGER (OLD)              FOX R               WI      881031    KAUKAUNA,CITY OF
* 0446130000DA2      2677 C       MO      BADGER(NEW)               FOX R               WI      881031    KAUKAUNA,CITY OF
* 0446150000CA1      2352 A       NO      MENASHA (LAKE WINNEB      FOX R               WI      881031    WHITING, GEORGE A PA
                                          AGO)                                                            PER CO
* 0446434000MA0      2550 A       NO      WEYAUWEGA                 WAUPACA R           WI      931231    WISCONSIN ELEC PWR C
                                                                                                          O
* 0447650000JA0      2689 A       NO      OCONTO FALLS              OCONTO R            WI      931231    SCOTT PAPER CO
* 0447650000PA1      2523 A       NO      OCONTO FALLS(UPPER)       OCONTO R            WI      931231    WISCONSIN ELEC PWR C
                                                                                                          O
* 0447811000MA1      2581 A       NO      PESHTIGO                  PESHTIGO R          WI      931231    WISCONSIN PUBLIC SER
                                                                                                          VICE CORP
* 0447813000MA1      2560 A       NO      POTATO RAPIDS             PESHTIGO R          WI      931231    WISCONSIN PUBLIC SER
                                                                                                          VICE CORP
* 0447830000JA0      2546 A       MO      SANDSTONE RAPIDS          PESHTIGO R          WI      931231    WISCONSIN PUBLIC SER
                                                                                                          VICE CORP
* 0447830000PA0      2522 A       MO      JOHNSON FALLS             PESHTIGO R          WI      931231    WISCONSIN PUBLIC SER
                                                                                                          VICE CORP
* 0447850000JA0      2595 A       MO      HIGH FALLS                PESHTIGO R          WI      931231    WISCONSIN PUBLIC SER
                                                                                                          VICE CORP
* 0447850000PA0      2525 A       MO      CALDRON FALLS             PESHTIGO R          WI      931231    WISCONSIN PUBLIC SER
                                                                                                          VICE CORP
                LISTING OF PROJECTS WITH LICENSES EXPIRING BETWEEN 1988       AND 1999  FOR JESSE SHORT
                                                              10/12/1988

* RIVER BASIN CODE  PROJ. SITE   STATUS   PLANT NAME             STREAM NAME        STATE   EXPI.     OWNER NAME
                    NUMB.                                                                   DATE
***
* 0448550000MA1      2536 A      MO       LITTLE QUINNESEC FAL   MENOMINEE R        WI      930630    NIAGARA OF WIS PAPER
                                          LS                                                           CORP
* 0448563000MA1      2486 A      MO       PINE                   PINE R             WI      931231    WISCONSIN ELEC PWR C
                                                                                                      O
* 0462200000MA1      2444 A      NO       WHITE RIVER            WHITE R            WI      931231    NORTHERN STATES POWE
                                                                                                      R CO
* 0463180000JA0      2564 A      NO       ORIENTA FALLS          IRON R             WI      931231    NORTHERN STATES POWE
                                                                                                      R CO
* 0730730000FA0      2348 A      NO       BLACKHAWK              ROCK R             WI      931231    WISCONSIN POWER & LI
                                                                                                      GHT CO
* 0730730000PA0      2347 A      NO       CENTRAL (JANESVILLE)   ROCK R             WI      931231    WISCONSIN POWER & LI
                                                                                                      GHT CO
* 0746530000MA1      1984 A      MO       CASTLE ROCK            WISCONSIN R        WI      980131    WISCONSIN RIVER POWE
                                                                                                      R CO
* 0772833000MA0      2417 A      NO       HAYWARD                NAMEKAGON R        WI      931231    NORTHERN STATES POWE
                                                                                                      R CO
* 0246510000PA1      2515 A      NO       HARPERS FERRY          POTOMAC R          WV      931231    POTOMAC EDISON CO
* 0596610000EA0      2459 A      MO       LAKE LYNN              CHEAT R            WV      931231    WEST PENN POWER CO
* 1746918520MA0      1651 B      MO       SWIFT UPPER            SWIFT CR,SALT R    WY      921130    SWIFT CREEK POWER CO
                                                                                                      ,INC
* 1746918520JA0      1651 A      MO       SWIFT LOWER            SWIFT CR,SALT R    WY      921130    SWIFT CREEK POWER CO
                                                                                                       INC
* 1746918200MA0      2032 A      MO       STRAWBERRY             STRAWBERRY CR,S    WY      990930    LOWER VAL PWR AND LT
                                                                 ALT R                                 CO




---
EXIT:
  11:19:08  10/12/88   END  SYSTEM 2000 - RELEASE 11.5
COPYRIGHT (C) 1985 SAS INSTITUTE INC., CARY, N.C. 27511, U.S.A. -
```

STILLWATER WMA

Senator **Reid**. I appreciate the attention in the budget, and I believe that the money for the Stillwater sets a great tone for refuge preservation, and that is so intermingled with endangered species, and I am glad to see that fish and wildlife is making a public stand on it, and you have been very helpful in the past couple of years when we have gotten money that the administration has requested.

So, I am glad to see that there is an acknowledgement from the administration, and certainly your office, of the importance of this money. We have some questions to submit to you in writing about Stillwater, and if you would respond in writing to our questions I would appreciate it.

Mr. **Turner**. Mr. Chairman, my office and the Portland, OR, regional office have spent a great deal of time on that water shortage problem, and I would like to thank you for your help. Stillwater is a marvelous area, and is extremely important. It is our hope that in working with you we can restore that wonderful area. It is a national resource.

Senator **Reid**. It really is, and it is amazing that it has lasted this long, and as a side note, most of you don't realize that the Stillwater area—that the water came from what was called the Carson River for 1,000 years, and then the Newlands project came in, and that water stopped.

And the marshes were only maintained because of the overflow from the farms these 80 odd years, and so it is great they are still there, as weak as they are. In order to facilitate purchases of water for these wetlands, we need new authority from the Service to enter into contracts.

We need you to provide for us language that can be added to the next available legislative vehicle to provide this authority, and we need that real soon.

This year the Fish and Wildlife Service has requested an increase of $3,052,000 for refuge maintenance, or a 9½-percent increase above the current level. This request comes on the heals of my successful effort to increase refuge maintenance funding by some $8,400,000 last year.

Even with these two sizable increases, we will still be far behind the refuge system maintenance needs. Do you agree with that?

MAINTENANCE

Mr. **Turner**. Mr. Chairman, last year we identified $312 million as the servicewide backlog of maintenance projects.

Senator **Reid**. It's incredible, isn't it?

Mr. **Turner**. Yes; it is the Secretary's wish, and certainly ours, that we begin a long-term program to address and correct that backlog, to bring facilities up to speed. We want to try and get our facilities where we can be proud of them and be fully functional by 1999.

Senator **Reid**. How thoroughly has the Service examined its reported backlog of maintenance projects, and are you confident that the list does not include a number of projects which are no longer necessary?

Mr. Turner. Mr. Chairman, we have received acclaim from parties outside the Service as having one of the best maintenance inventory systems in the Federal Government. Our people have gone in and identified what has to be done, estimated costs, and prioritized the work in order to keep an inventory.

It does not address new construction, but I think it is a sound system that documents maintenance costs on refuges, hatcheries, and research facilities. The 1991 request includes a $3 million increase for refuge maintenance, and $9.4 million to address construction-rehab.

Realizing that in these times we all have to deal with a constrained budget, I think that we are making progress in addressing maintenance that is long overdue.

Senator Reid. On page 135 of this budget justification, the capital investment in the refuge system is estimated to be about $3 billion; and could you give us, if not now, later, a spread by type of investment, that is, building water control structures, et cetera. Could you do that?

[The information follows:]

Capital Investments

The Service does not currently maintain an up-to-date inventory of replacement value for its capital investments. However, the current Servicewide capital investment is estimated to be $3.5 billion by updating data from previous reports and applying indices for inflation. The following breakdown of the Service's capital investment by activity area and category as provided below is the best estimate available.

CAPITAL INVESTMENT

[In millions of dollars]

Facility	Hatcheries	Refuges	Research	Law enforcement	Total
Buildings	290	690	150		1,130
Other structures and facilities	390	1,850	30		2,270
Equipment, vehicles	20	60	20	20	120
Total	700	2,600	200	20	3,520

MAINTENANCE MANAGEMENT SYSTEM

Mr. Gerst. I am Jay Gerst, the Assistant Director for Policy, Budget, and Administration. Yes; we can provide that. The maintenance management system, which is what the Director has been talking about, is the first major system where maintenance and construction-rehab needs have been compiled under one system.

We can provide a great deal of data from that system. It is important to note that our system does address your concern about reporting information that may not be current. This system is a major Service initiative, and we have a great deal of confidence in it. We are in the process of completing an annual update of the maintenance management system to include a review of the data base.

The backlog that the Director referred to, the $321 million, includes not only maintenance projects, but construction-rehab projects. We can provide a priority list of projects from that data base. We are, at this point, refining that data base to ensure that it is accurate and does reflect the needs of the Fish and Wildlife Service maintenance program.

Senator REID. We have a number of questions that we will submit to you in writing regarding this maintenance program, and we would request that you respond to those at the earliest possible date.

The budget proposes an increase of $940,000 for inland and Great Lakes hatchery operations. How much of this increase represents new requirements, such as the transfer of four tribal fish hatcheries, with fixed increases, such as higher fish food and utility costs, and with operation of the new Nisqually Hatchery, and how much, if any, of the increase actually represents a program enhancement?

HATCHERY OPERATIONS

Mr. TURNER. Mr. Chairman, I would like to ask our Assistant Director for Fisheries, Gary Edwards, to respond.

Mr. EDWARDS. Mr. Chairman, I am Gary Edwards, Assistant Director for Fisheries. In response to your question on the $2.6 million increase requested for hatchery operations, $370,000 is an increase for fish food. This brings the increase for fish food over the last 2 years to $1 million.

As we testified last year, we have experienced increases in fish food costs up to about 45 percent in parts of the country. In the 1991 request there is an additional $200,000 for tribal hatcheries, which primarily provide fish for Indian tribal waters. There is an additional $400,000 for the new Nisqually Hatchery, to begin the operations.

There is an overall increase of $975,000 for increased fish production, that will affect some 21 facilities. In addition to that, there is a request of $900,000 in the area of fish health, which will allow us to implement our new fish health policy, and do a better job of providing fish health services to private aquaculture.

I would also remind you that there is an additional $1.8 million that is part of the lower Snake River compensation plan. About $981,000 will go toward bringing the new Clearwater Hatchery on line, and the remainder of the money will be used for evaluation of fish that are produced at 21 facilities and to bring some of the other facilities up to full production.

Senator REID. We are going over this here on this side of the table, and we can't figure out how you come to those figures.

Mr. EDWARDS. Mr. Chairman, our funding for operations is divided in two areas, and what I gave you represents the total increase in both of those areas.

Senator REID. That still would not work out. On page 177—do you have that?

Mr. EDWARDS. Ms. Tynan just pointed out that the $2.6 million increase would not include the lower Snake River compensation plan, which is a separate account, or the fishery assistance subactivity. The increase in hatchery operations is $2.6 million, and that includes funding for all of our production that we do throughout the hatchery system.

INLAND/GREAT LAKES HATCHERY OPERATIONS

Senator **Reid**. Let's just talk about inland though. That is $940,000, and that is your whole budget proposal increase; the inland and Great Lakes hatchery operations. That figure right there is just for that.

Mr. **Edwards**. If you are strictly talking about just that portion of the budget that would apply to the inland and Great Lakes program, it would be $940,000 including $200,000 for fish food for the inland and Great Lakes hatcheries, such as the Lahontan Hatchery, in Nevada; $100,000 would be for increased production. This would be over and above the increase for fish food and would bring some of those facilities up to 100 percent production; $705,000 of the $900,000 that would go into fish health would be applied to the inland and Great Lakes hatcheries which would expand our fish health capabilities in the inland States.

Then in addition, of the three tribal hatcheries that I mentioned, $135,000 is going to Mescalero, Alchesay, and Williams Creek National Fish Hatcheries.

Senator **Reid**. OK. Again, looking at page 177, we have the total increase of $940,000, and that is what your figure is there.

Mr. **Edwards**. Yes.

Senator **Reid**. But yet the figure that you have given us is well over that. It is $300,000 or so over that.

Mr. **Edwards**. Senator, I don't have an explanation.

Senator **Reid**. But do you see where the figures differ?

Mr. **Edwards**. The other thing I would point out is that there is a $200,000 reduction for the National Fisheries Academy.

LAND ACQUISITION

Senator **Reid**. OK. Mr. Turner, the Service's fiscal year 1991 budget request for land acquisition under current law is $67,990,000. I note with some irony that under the America the Beautiful initiative that we would make America more beautiful by buying less land, only $56,700,000 in fiscal year 1991.

I am not necessarily in disagreement with the policy, especially in view of our discussion about maintenance, but I am interested, however, in discussing how you prioritize your proposed land acquisition projects as submitted to the Congress.

I will read from a table that was prepared by the subcommittee; administration priority, or maybe OMB priority, No. 1, Service priority No. 32. Do you follow where we are coming from there?

OMB priority, No. 2, and Service priority, No. 1; OMB priority, No. 3, Service priority, No. 31. How could there be on items like this—how could OMB disagree with your office?

Mr. **Turner**. Mr. Chairman, the Fish and Wildlife Service has a mandate to look at wildlife in determining acquisition priorities. We consider the projects using our own priority system, and then our projects, of course, compete with other agencies, including the Park Service, Bureau of Land Management, and the National Forest Service.

We apply the administration's criteria, which put more of an emphasis on two things. One, is how near you are to a large urban area population; and second, what are the opportunities for multiple recreation opportunities. This includes everything from snow mobiling to fishing and hunting.

Those are appropriate national concerns that the administration has tried to address, and simply put, some of our wildlife properties do not rate as high in the national rank because of those two criteria; being near an urban population, and the opportunities for multiple recreation opportunities.

Senator REID. I wonder if you could repeat how we talk all that money from New Mexico? [Laughter.]

Just a joke. Mr. Turner, how were the internal Fish and Wildlife Service land acquisition priorities established in the first place?

Mr. TURNER. Mr. Chairman, I believe the regions go out and identify property based on opportunities and what is offered, and consider their needs. Then, we take all the regional requests and put them through our land acquisition priority system.

Maybe Dave Olsen, the Assistant Director of Refuges and Wildlife, would like to expand on my statement.

Mr. OLSEN. The land acquisition priority system is a system that was devised a number of years ago. We identify the resource priorities and the endangered species, and then come out with a priority listing.

It is a process that we have used over a number of years and it seems to work very well.

REFUGE REVENUE SHARING

Senator REID. Mr. Turner, for refuge revenue sharing, the request is $9 million. Together with an estimated $3,624,000 in receipts from sales on the refuges, the total fiscal year 1991 payment to counties in lieu of taxes would be the same as the current level of $12,624,000.

What is the total necessary to full fund obligations to the counties in which Federal refuges exist?

Mr. TURNER. Mr. Chairman, if we were going to go to 100 percent entitlement, we would require almost $17 million in total.

Senator REID. So, about a $4.5 million short.

Mr. TURNER. Correct.

Senator REID. I note that you sought full funding for refuge sharing in your request to OMB.

Mr. TURNER. Correct.

Senator REID. You were in good if it weren't for them, huh? [Laughter.]

How have shortfalls in refuge revenue sharing affected your relationships with the counties and how has it affected your operations in the field?

Mr. TURNER. Mr. Chairman, I have had to approach this problem wearing two hats; one having been a State legislator, and seeing what kind of neighbors the Federal Government was and how they behaved in the counties. The areas that we seem to have the most difficulty with relative to refuge revenue sharing are the Dakotas, Minnesota, and some of the Western States.

I am pleased that we are able to provide as much as 75 percent of full entitlement, and I would hope that we can do better in the future.

HURRICANE DAMAGE RELIEF

Senator **Reid**. Last September, a number of Fish and Wildlife Service facilities were battered by Hurricane Hugo. Briefly, what is the total damage estimates for your facilities?

Mr. **Gerst**. The total estimate of damages was in excess of $10.2 million. However, we received Hurricane Hugo relief funds equal to $6.3 million. I can provide details on where that money was allocated.

The bulk of the money was allocated to Cape Romain National Wildlife Refuge on the Carolina coast and the Puerto Rican parrot recovery effort.

EMERGENCY FIRE COSTS

Senator **Reid**. It is my understanding that despite the appropriation of $16,250,000 to the Service last year for current year firefighting costs and reimbursement of funds borrowed from other accounts for this purpose in prior years, the Service is still some $8 million short.

Included within this total is approximately $1.5 million for the Boque Chitto Visitor Center, for example. Why has the entire fire funding shortfall been applied solely to the "Construction" account, and why have funds not been withheld from land acquisition projects?

Mr. **Turner**. Mr. Chairman, I am going to ask Dick Smith to respond to that. That was not a decision that we made within our agency.

Mr. **Smith**. I was the one that had to sit down and make the decisions on what projects would have funding restored and what would not be restored.

Senator **Reid**. And these instructions were from whom?

Mr. **Smith**. I would like to ask Jay Gerst.

Mr. **Gerst**. The project listing was—I am not sure I am answering your question. Let me try this another way.

Senator **Reid**. Why did they take it only out of construction?

Mr. **Gerst**. We selected construction projects, at the time, based on an assumption that the funding would be restored during the first 6 months of fiscal year 1990 and that there would be no adverse impact on the projects. We borrowed from projects as to cause minimal or no disruption in Service activities.

As events later transpired, we were not able to request supplemental funding, and that left an unpaid balance of $8,363,000 in construction. The intent of the distribution by project was to avoid adverse impact.

Senator **Reid**. OMB determined then that the construction account would not be fully reimbursed?

Mr. **Smith**. Yes.

Ms. **Tynan**. That is correct.

Senator **Reid**. As we discussed last year, this situation is a de facto line-item veto by the Office of Management and Budget, and the chairman of the committee, or the majority of the committee will not stand for that.

So, would you supply a letter to the chairman by the end of this week, detailing the total unreimbursed section 102 emergency funding transfers by agency and by categories, such as fire, oilspill, earthquake, et cetera.

Would you also indicate any additional fiscal year 1990 funding requirements that the Department is reviewing related to emergencies which have occurred previously?

Mr. TURNER. Thank you, Mr. Chairman. We will do that. We do have a listing on fire funding.

[The information follows:]

LETTER FROM LOU GALLEGOS, ASSISTANT SECRETARY, POLICY, MANAGEMENT AND BUDGET, OFFICE OF THE SECRETARY

APR 4 1990

Honorable Robert C. Byrd
Chairman, Subcommittee on the Department
of the Interior and Related Agencies
Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

On March 27 at the hearing on the FY 1991 budget of the Fish and Wildlife Service, Senator Harry Reid, who was chairing the hearing, asked the Department to provide a letter to the Subcommittee on costs to repay the funds transferred under the Secretary's authority to cover emergency expenditures in FY1989, Alaska oil spill related costs, and costs for activities related to Hurricane Hugo, the Loma Prieta earthquake, the Mt. Redoubt volcano eruption, and Office of Surface Mining AML emergency projects. Enclosed is the information requested.

The Administration has no objection to inclusion of $77 million in the FY 1990 Dire Emergency Supplemental Appropriations bill to repay 1989 transfers to cover fire and other emergency costs. We are currently in the process of preparing reprogrammings for FY 1990 and budget reallocations for FY 1991 to cover high priority Alaska oil spill related costs and costs related to Hurricane Hugo, the Loma Prieta earthquake, the Mt. Redoubt eruption and the AML emergency projects, and recommend no further funding be approved.

Sincerely,

Lou Gallegos

LOU GALLEGOS
Assistant Secretary
Policy, Management & Budget

Enclosure

ENCLOSURE I

EMERGENCY TRANSFERS

1989 FIREFIGHTING TRANSFERS:

($ in thousands)

Bureau/Account:	Amount Transferred	Amount Repaid[1]	Amount Outstanding
BLM/Land Acqu.	2,816.9	2,816.9	0.0
BLM/Construction	4,743.6	2,656.0	2,087.6
FWS/Land Acqu.	24,839.8	24,839.8	0.0
FWS/Construction	18,999.2	10,636.0	8,363.2
NPS/Land Acqu.	33,092.3	29,562.3	3,530.0
NPS/Construction	92,324.4	50,254.0	42,070.4
BIA/Construction	39,231.1	23,393.0	15,838.1
TOTAL, DEPARTMENT:	216,047.3	144,158.0	71,889.3

[1] Repaid from 1990 BLM Firefighting Appropriations

OTHER 1989 EMERGENCY TRANSFERS:

($ in thousands)

Bureau/Account:	Amount Transferred	Amount Repaid	Amount Outstanding
BLM/Construction [§101: Loon Lake Facility Reconstruction]	80.0	0.0	80.0
NPS/Construction [Exxon *Valdez* Oil Spill]	4,957.7	0.0	4,957.7[2]

[2] Claims of $2,576.3 have been submitted to the Coast Guard by NPS for "out-of-pocket" expenses related to the oil spill. If received, these funds will be used to partially repay this outstanding amount, for a net outstanding amount of $2,381.4.

ENCLOSURE II

HURRICANE/EARTHQUAKE/VOLCANO FUNDING

1989 SUPPLEMENTAL FUNDING

Included in the 1989 Dire Emergency Supplemental was $250 million, appropriated to the President, to address natural disasters. On December 21, 1989, the following distribution of the funds was made:

Department of Agriculture	28,000
Department of Veteran's Affairs	56,800
Department of Education	62,750
Department of Defense	5,000
General Services Administration	15,000
Department of the Interior	28,977
Nat'l Inst. of Science & Technology	2,000

FEMA	3,000
National Science Foundation	3,000
SUBTOTAL	204,527
Unallocated	45,473
TOTAL	250,000

The distribution of the Department of the Interior is as follows:

Bureau	Hurricane Hugo	Loma Prieta Earthquake	TOTAL
USGS	0	12,000	12,000
FWS	6,277	0	6,277
NPS	10,700	0	10,700

ADDITIONAL IDENTIFIED NEEDS:

The following amounts have been identified as additional needs within the Department of the Interior for three natural disasters and are currently under review within the Administration:

Bureau	Hurricane Hugo	Loma Prieta Earthquake	Mt. Redoubt Volcano	TOTAL
USGS	4,000	1,500	6,246	11,746
FWS	5,000	0	0	5,000
TOTAL, DOI	9,000	1,500	6,246	16,746

ENCLOSURE III

EXXON *VALDEZ* OIL SPILL, PRINCE WILLIAM SOUND, ALASKA

1989 DEPARTMENT OF THE INTERIOR COSTS AND FINANCING:

In FY 1989 the Department of the Interior spent $13.2 million for preplanning/contingency, response, damage assessment, and related activities as a result of the March 24, 1989, Exxon *Valdez* oil spill in Prince William Sound, Alaska. In addition, FWS had $1.1 million in costs related to the completion of the first year's damage assessment studies (through February 28, 1990).

These total 1989 costs (including the $1.1 million) of $14.2 million (rounded) were covered within funds from the following sources:

- Oil Spill Emergency Fund (created in 1989 Supplemental)
- Damage Assessment funds provided to the Federal natural resource trustees by Exxon
- Funds from bureau 1989 appropriations
- Emergency transfer under section 102

1990 DEPARTMENT OF THE INTERIOR COSTS AND FINANCING:

We have estimated our costs for 1990 by bureau and by type of activity. These are summarized as follows. These figures are by fiscal year, except that requirements to complete the second year of damage assessment studies (in FWS) are included. That makes these figures comparable to the 1989 figures above. Note that final estimates for damage assessment studies are now being prepared by the project teams in Alaska; thus, these figures may be revised slightly.

($ thousands)

Bureau	Response	Damage Assessment	Project Support	Other	TOTAL
BLM	0	0	12	0	12
FWS	300	7,169	305	0	7,774
NPS	1,129	176	554	0	1,859
BIA	0	0	0	775	775
DEPT. OFFICES	2	89	12	833	935
TOTAL, DOI	1,441	7,434	883	2,875	11,355

Funding needs are projected to continue the clean-up activities in Prince William Sound by both the Fish and Wildlife Service and the National Park Service, primarily to monitor and support the direct activities of Exxon and its contractors. Damage assessment activities will continue, with Interior (through FWS) responsible for eleven biological studies plus a share of economic, archaeological, and restoration studies. NPS also expects to incur expenses related to damage assessment, primarily for study activities occurring on NPS lands. Both FWS and NPS continue to incur costs related to significant management and administration needs related to the oil spill, including financial management, civil/criminal investigation support, and damage assessment plan preparation. Both bureaus have established separate organizational units in Alaska to coordinate and manage their oil spill activities. Departmental offices (Solicitor and Environmental Affairs) will continue to incur higher than budgeted costs to support bureau activities and coordinate with other agencies, including the Department of Justice, the Department of Transportation, and the State of Alaska.

A number of sources of funding have been identified to cover the Department's expected 1990 Alaska oil spill costs. These are summarized as follows:

TOTAL IDENTIFIED NEEDS: 11,355

AVAILABLE RESOURCES:

BIA Base Funding	775	BIA plans to fund its work within existing 1990 appropriations
Oil Spill Emergency Fund	1,500	The current balance of the fund is $1.759 million; we propose reserving 259 thousand at this time to cover contingencies in 1990. Under the provisions of the 1989 supplemental, these funds expire in 1990.
311(k) Reimbursements	555	This amount represents the total in claims submitted to the Coast Guard by Interior bureaus. In addition, $601 thousand in claims have not yet been submitted to the Coast Guard.

FWS funds from 1989	1,624	FWS did not use all of the funds provided for oil spill work in 1989 since certain studies were begun late and others cost less than anticipated. This amount remains available within FWS for oil spill costs.
SUBTOTAL, AVAILABLE RESOURCES	5,287	
Current Needs	6,901	This amount represents the current balance of needs, net of available resources. Included in this figure is $833 thousand for the Department of Justice to provide funding to support the oil spill litigation. We anticipate that reprogrammings or use of the Secretary's emergency transfer authority under section 102 of the Interior appropriations act will be necessary to meet these needs. Sources of reprogrammings or emergency transfers are being identified by the Department. We do not believe that support for the Justice litigation needs is possible using the section 102 authority.

NOTE: Most of the available resources, as well as any reprogrammed and transferred funds, will expire on September 30, 1990. The total identified needs of $11.4 million for 1990 include the full cost of completing the damage assessment studies that begin in March 1990. These studies will continue through February 1991. The Department is in the process of preparing reallocations for FY 1991. Those reallocations will cover the FY 1991 portion of the studies that began in March 1990 and will be completed in February 1991.

1991 DEPARTMENT OF THE INTERIOR COSTS:

We have made some preliminary estimates of 1991 costs related to the oil spill, including continued costs for response, damage assessment, project support, and legal costs. To be consistent with 1989 and 1990 estimates, the 1991 estimates will include the costs of continuing through February 1992 the FWS damage assessment studies that would begin in March 1991.

ENCLOSURE IV

AML EMERGENCY PROJECTS

1990 OSM AML EMERGENCY PROJECT FUNDING:

AML Emergency Projects	+6,500,000

Due to the unusual combination of early frigid weather followed by warm wet weather during the FY 1990 winter, there has been a 30% increase (through February) in emergency AML projects. OSM expects this trend to continue through June, 1990. A total of 119 additional projects is anticipated, for a total additional cost of $6.5 million in 1990. The Department is considering addressing these needs through a reprogramming or emergency transfer.

ALASKA SUBSISTENCE

Senator **Reid**. Mr. Turner, finally, my understanding is that section 8 of the Alaska National Interest Lands Conservation Act assigns to the Secretary of the Interior management of subsistence hunting on Federal Lands in Alaska.

The Secretary, in turn, has delegated this responsibility to the State of Alaska. Would you describe for the record what the recent Alaska State Supreme Court ruling is with respect to restrictions on subsistence hunting?

Mr. **Turner**. Mr. Chairman, Secretary Lujan, myself, and the Assistant Secretary, have spent a great deal of time discussing the options that we have before us related to the subsistence hunting question, how it relates to the court decision, and how it relates to ANILCA.

We are in close contact with the State of Alaska as they try to wrestle with what was basically a violation of their own constitution.

Senator **Reid**. Because the court ruled that it was unconstitutional under State law?

Mr. **Turner**. It was, under the State constitution. So, we have established a task force here, within the Interior, to look at legal options and policies established by the Secretary.

Our Regional Director for Alaska, Walt Stieglitz, has set up a regional task force to include the Forest Service, BLM, and the Park Service, and other Federal agencies. They are drawing up a contingency plan—if, in fact, the management of subsistence hunting becomes our responsibility on July 1, or prior to that and the stay before the court is not continued, then we will have options.

It is an option that we have not been looking forward to, but I am going to ask Walt Stieglitz, the Regional Director from Anchorage, AK, to further comment on this.

Mr. **Stieglitz**. I think that the Director pretty well summarized where we are with the situation. The State supreme court issued a stay until July 1, 1990, in the implementation of their decision. The State legislature is considering a piece of legislation which would serve to amend the Alaskan Constitution. If it passes the legislature and the general popular vote in November, that would, in fact, leave the State in compliance with Federal law and Federal assumption of management would not be necessary.

It is problematical whether or not the State effort will be successful, and we are hoping that it will be.

Senator **Reid**. Two more Senators just showed up, and I am going to have to stop at 2:30, and so you had better get your questions in by 2:30. Please proceed, Senator Nickles.

LAKE ELMER THOMAS DAM

Senator **Nickles**. Thank you, Mr. Chairman, and I will be very brief. I have to be on the floor at 2:30, and I know that Senator Domenici has some questions, too, so I don't think we want to recess the hearing until he has had a chance to finish, but I will be very brief.

Mr. Turner, a couple of quick parochial questions. I think you are probably aware of the Lake Elmer Thomas Dam, Lake Elmer

Thomas Dam problems that we have had in Lawton, OK, and the Fish and Wildlife Service dam that was determined to be in a bad state, and needs to be repaired, and it was in a bad state, and so the water has been drained and now we are in the process of trying to reconstruct the dam.

It has been my hope and contention that we would fully restore the dam, and not just repair it as some had said, and use it as a contingency to possibly catch water, but I would like to have a lake as they have had going all the way back to the 1930's.

We were successful last year in putting in $3 million, I believe, and I understand that you have requested $5.8 million for fiscal year 1991. What is the status? Will this be enough?

I understand that to fully restore the dam it would take $15 million, or at least that was the last estimate, and I know that you were working or negotiating with Fort Sill and trying to get some assistance from them.

What is the status of that, and do you agree with me that we should fully restore the dam?

Mr. TURNER. Senator, for the best answer, I will turn your question over to the Regional Director, who has been working with this project, Michael Spear, from Albuquerque, NM.

DAM REPLACEMENT

Mr. SPEAR. I am Mike Spear. Senator, to give you an update on that, I met with General Halladay at Fort Sill approximately 2 months ago and discussed your desire to reconstruct a full size impoundment dam. As you know, it has been our position that we would like the support of the Army for the cost for full dam replacement costs in addition to our $8.8 million contribution.

General Halladay has already indicated to us that he will provide military support to accomplish some of the work. He has also asked that we go back and look at another alternative, possibly making the dam a little smaller.

Just last Friday I wrote to the General and indicated that we had completed that analysis. We could reduce dam height by approximately 4 feet and save $800,000.

The final picture right now is that we have asked for additional appropriations of $5.8 million. In total it will cost $11.8 million to build the big dam, and $11 million to build the dam that is reduced by 4 feet, or $8.8 million to build the 100-year flood control dam with no impoundment.

I am waiting for General Halladay's comments as to whether or not he wants to go with a dam that is 4 feet shorter. It is our position that we would be happy to reconstruct the big dam if the military will come up with the additional funding needed.

COST SHARING—DAM RECONSTRUCTION

Senator NICKLES. I know that I talked to General Halladay as well, and he mentioned that they would give the military support—clearing brush, and doing some other things, I think, with men and equipment, and that can help reduce the costs. We want that to happen, but I also want to have a dam with some water behind it.

I am not an expert enough to know how much a difference that 4 feet would make, but I want to reiterate my strong support for fully restoring the dam. My guess is that if you are talking about $11.8 million, and you already have $8.8 million, and so you are talking about a difference of $3 million that you could put in the following year and we would be done, and that would be the full dam, and I would hope that is what we would do.

And I would like to have the Fish and Wildlife Service support to make that happen. Do I have that support?

Mr. SPEAR. Senator, I am not in a position to answer that question.

Senator NICKLES. Mr. Turner, do we have that support? I am wanting to make it happen.

Mr. TURNER. Senator, I will respond to you in writing, but I would like to know a little more about it. To be honest, I am a little concerned about the Fish and Wildlife Service setting a precedent in reservoir building, or dam building for recreational purposes.

I need to sit down with my people and go over this issue, and get back to you with a written response.

FUNDING FOR DAM RECONSTRUCTION

Senator NICKLES. Well, we need to get it resolved. If you don't, you are going to end up having a very unattainable situation of building a dam and not having any water behind it, and that is not satisfactory to me, and that is not satisfactory to the taxpayers, and not satisfactory to Fort Sill, all of which have indicated a willingness to try and make it happen.

There was a dam failure, and there was a dam safety problem, and so we wanted to eliminate that, and we have done so, but it certainly is not going to be satisfactory to restore it at less than having a situation of having a dam without having water behind it.

So, hopefully you would respond to me in writing, and I would appreciate that very quickly. It sounds to me like we are very close. Very close indeed.

Mr. SPEAR. I believe that a 1992 schedule would be satisfactory—as far as being able to stay on a construction schedule. From the Service's perspective construction of a big dam does not bother us from a policy point of view. I think, though, that there are difficulties with funding, as the Interior Department has not elected to come up with the additional $3 million difference, and that is a question that has to be addressed.

Senator NICKLES. Well, right now you have $5.8 million for 1991, and the question is whether we come up with the $2.2 million or the $2.8 million, or the $3 million for 1992, and let me again restate my strong support for that, and we are trying to make it happen.

And one last question, and I appreciate Senator Domenici's indulgence. Wichita's Mountains National Wildlife Refuge is the most widely visited refuge in the country, and yet it does not have a sufficient visitors center. The visitors center was built in the 1930's, and it is in the wrong location, and it needs to be replaced.

Last year we put in money, approximately $450,000, to plan a center, and can you tell us if that plan and study is complete?

WICHITA MOUNTAINS VISITOR CENTER

Mr. **Spear**. Senator Nickles, in August 1990, the design of the visitors center will begin. We have an interpretative consultant on board at this stage. We do not yet have the design, and we have gone out and located a site. When completed, we will have a construction design of approximately 20,000 square feet.

We should be ready by the end of this year to actually have a funding estimate. We anticipate it will be in the range of $5 million.

DEEP FORK NWR ACQUISITION

Senator **Nickles**. And one final last question. There has been a proposal for the Deep Fork National Wildlife Refuge acquisition of land. Is the Service supportive of that?

Mr. **Spears**. Senator Nickles, that is on our list of priority acquisitions under the North American waterfowl management plan for Oklahoma. I have worked with State Director Steve Lewis on that project, and he is very supportive. We have started our on-the-ground planning for that project, and, yes, it is a very good project.

Senator **Nickles**. I have additional questions, but I will submit those for the record, and I appreciate Senator Domenici's indulgence. Thank you.

Senator **Reid**. Thank you, Senator Nickles. Senator Domenici.

Senator **Domenici**. Mr. Chairman, let me first say to you that I am going to try very hard to be brief, because this meeting was moved around and you have already been greatly inconvenienced.

If I might for the record, Mr. Turner, indicate to you that I have a very grave concern about the maintenance backlog of your agency. I can't find it as such looking through——

Senator **Reid**. You should have been here earlier. We went through that already. I believe the Director indicated his grave concern, also.

Senator **Domenici**. It is a big ticket item, and frankly, I think it is only a matter of time as we fund new things that both you and we are going to come under major criticism for deferred maintenance. If you have already talked about it——

Mr. **Turner**. Well, I appreciate your interests and your concerns. As I said earlier, with the 1991 request we can begin to address the backlog.

Senator **Reid**. Senator Domenici, I would just say quickly that the figures that they submitted to the Office of Management and Budget reflect their concerns.

BOSQUE DEL APACHE NWR

Senator **Domenici**. I have one or two other questions. Last year we requested funding to begin the upgrading of the Bosque del Apache Wildlife Refuge, specifically the water supply system. It is my understanding that the work has been performed, and it has been extremely important in improving the water delivery system to that refuge.

However, other improvements are needed. The maintenance facilities and storage buildings are all very old. I don't need an answer now, but could you supply the subcommittee with an assessment of the additional improvements that are needed there? I think it is a rather significant American refuge with great acclaim, and I hope that we can do something to upgrade it soon.

DEXTER NFH

Another question pertains to the Dexter Fish Hatchery. I don't know if you are aware of that either, Mr. Director, but it has a significant need for new offices and a wet laboratory. We are not going to be able to continue it as a full blown hatchery if we don't get needed improvements there. I would also like your observations on that facility if you would, please.

New Mexico State University is a fish and wildlife cooperative unit, and I wish you would take a look at the situation there. I think it is totally understaffed at this point. It has already been around for a while, and it is not a big ticket item.

And my last issue has to do with something we have previously brought to your attention. There is great interest being expressed in New Mexico for research funds to undertake a comprehensive study of the riparian ecosystem, a bosque habitat, along the Rio Grande River. We have never funded it, but I understand that among the professionals in your agency, it has a very significant and high priority. I would appreciate your comments on the middle Rio Grande research proposal.

ARCHEOLOGICAL RESOURCE INVENTORY

I will submit a question on your activities with reference to an area that has concerned me greatly. That area has to do with an inventory of the archaeological resources on lands under your jurisdiction. I compliment you, as you are doing some good work.

I think we ought to know how well you are doing, in terms of percentage of activities, because this activity is disbursed among a number of agencies. We always catch hell because the sum total is not getting done, and yet, we can't do such an inventory under one agency. You have some parts, and others have others. So, I would give you questions specifically asking for an update on how well the Fish and Wildlife Service is doing on archaeological inventories.

Senator **Reid**. Senator Domenici, just interrupting again, I want you to know what we are looking at for you. Dexter is going to get about $100,000 as it stands around now in current plans.

Senator **Domenici**. In current plans, current proposals?

Senator **Reid**. Yes.

Senator **Domenici**. Very good. I don't know how it fits with the needs, but obviously there are an awful lot of needs around here, and so we are grateful to get some funding. Thank you, Mr. Director, and let me say, Mr. Chairman, that I think our Fish and Wildlife Service Regional Director in New Mexico for the region, and who is here today, Mr. Michael Spear, is doing a marvelous job. I want to compliment him for the fine job he is doing.

ADDITIONAL COMMITTEE QUESTIONS

Senator **Reid**. I appreciate that very much, and your usual great contribution to this committee, and we also appreciate your leadership, Mr. Director. Thank you very much. There will be some additional questions from various Senators which we will submit to you for our response.

[The following questions were not asked at the hearing, but were submitted to the Service for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR J. BENNETT JOHNSTON

Bogue Chitto NWR Construction Account

Question: In previous fiscal years, I requested that $1.6 million be earmarked for the construction of a visitors center and maintenance facility at Bogue Chitto NWR. Due to a proposed addition to the National Wildlife Refuge system in the New Orleans vicinity, the construction has been delayed at Bogue Chitto. During the previous year, the U.S. Fish and Wildlife Service used the funds that had been earmarked for construction at Bogue Chitto NWR to meet its unfunded fire fighting expenses. Since that time, Congress has passed the FY 1990 Interior Appropriations bill. Nonetheless, I understand that the Bogue Chitto construction account has not yet been reimbursed for funds borrowed from it. When does the Service intend to make this account whole?

Answer: The FY 1990 Appropriation provided $35.5 million for repayment of FY 1989 emergency fire costs. However, a total of $43.8 was loaned from land acquisition and construction projects. The Department was required to repay the land acquisition projects in total and distribute the remainder to highest priority construction projects. At this time the Service has not repaid $8.4 million in 28 construction projects including the visitors center at Bogue Chitto NWR.

Question: Will you use available FY 1990 fire fighting funds to do so? If not, why not?

Answer: The Service used $10.6 million of FY 1990 fire fighting funds to restore funding to FY 1989 construction projects. No additional FY 1990 funds are available to repay the funding of $8.4 million in FY 1989 and prior year construction projects.

Question; If not, do you intend to request a supplemental appropriation for this purpose? If not, why not?

Answer: The Administration is not planning on submitting a supplemental appropriations request for this purpose, due to overall budget concerns.

Emergency Land Acquisition at Grand Cote

Question: On January 24, 1990, I wrote to John Turner concerning the need to acquire some important inholding at Grand Cote National Wildlife Refuge in Avoyelles Parish. In your response to me you alluded to the fact that it is feasible that funding would be available for willing seller acquisition in FY 1991. Unfortunately, this time table appears rather vague and does not answer the urgency of acquiring the key tracts that I mentioned in my earlier correspondence.

As you are aware, real estate values within and adjacent to national wildlife refuges usually escalate rapidly in value and often the owner decides not to sell. The small tracts I referred to my letter are important to the water management and integrity of the refuge.

Due to the fact that there will obviously be a delay in funding, it would appear appropriate for the Service to request that The Nature Conservancy acquire these options since they already own the bulk of the refuge. The amount of funding involved for these inholdings is rather small ($234,180) and the consequences great if this property became unavailable for future acquisition.

If the Service is unwilling to use the funds it has available in FY 1990 for land acquisition pursuant to the North American Waterfowl Management Plan, can I have your assurance that you will pursue possible options with the Nature Conservancy?

Answer: Discussions have already been held with The Nature Conservancy relative to the acquisition of other ownerships within the refuge boundary at

Grand Cote. The Nature Conservancy is attempting to acquire some of those ownerships through exchange for lands they acquired for the proposed Grand Cote NWR which were not within the proposed boundary of the refuge. The possibility of their acquisition of other ownerships by fee purchase is being considered.

Question: If The Nature Conservancy is unable to assist with this matter, will you pursue similar options with other organizations that may be in a position to assist with this emergency acquisition?

Answer: Assistance will be requested of other organizations if we become aware of any that are willing to help. The Fish and Wildlife Foundation is one such organization. They generally operate on a matching fund basis.

Marsh Management

Question: The tremendous loss of wetlands in coastal Louisiana continues to be an acute national problem. I was pleased to learn that Director Turner and Assistant Secretary Harriman recently visited Louisiana and have seen these coastal losses first hand. I am also pleased that the Fish and Wildlife Service is seeking funding within the President's budget for research to help solve this problem of wetland loss. Nevertheless, at least one important item, marsh management, remains unfunded. At this time, marsh management is viewed by many as the only solution for vast areas of Louisiana's coastal marsh, but there is technical disagreement about what works and what does not work. What can the Service do to address this research problem?

Answer: In its report to Congress on coastal wetland loss, the Service discussed establishment of experimental marsh management units within the deteriorating marshes of the deltaic plain of the Mississippi River. These units could be enclosed and subjected to active management to determine the impacts of drawdowns and seasonal manipulations of water levels on wetland revegetation, plant production and processes of sediment accumulation, nutrient cycling and salinity levels. Habitat conditions in these units will be compared before and after management. Comparisons of conditions between the managed units and unmanaged control areas will also be made during a five year management period. The research will also consider effects of herbivore and other management practices such as burning and fertilizer additions to wetlands as contributing factors to or solutions for wetland loss. Field work will be complemented by annual aerial photography and GIS analysis of the management units and their controls, as well as several large State marsh management projects, to determine the extent and locational significance of revegetating areas.

Question: What additional resources does the Service need to carry out this important work?

Answer: Costs for accomplishing these research objectives are estimated at $800K per year for Fiscal Years 1991 through 1995. This is a component of the coastal loss research program. In its report to Congress the Service identified $2.4 million in annual funding needs. This figure includes costs of conducting the research in-house, constructing marsh management units and contracts for portions of the research.

Research costs are broken as follows:

	FY 1991	FY 1992-1995 (annual cost)
Salaries	$200K	$300K
Construction/Maintenance	300	90
Contracts	210	270
Equipments/Supplies	75	125
Travel	15	15

National Wetlands Research Center; Lafayette, Louisiana

Question: The construction of the National Wetlands Research Center facility in Lafayette, Louisiana seems to be on schedule and I am looking forward to the ground breaking ceremony scheduled for early July. Last year, the managers of the Interior Appropriations Conference agreed to incrementally fund the construction of this facility.

What resources does the Service need in FY 1991 to complete the construction of the facility?

Answer: Planning funds of $1,050,000 for a new facility were appropriated in FY 1989, and an additional $6,000,000 was appropriated in FY 1990 to initiate construction. An additional $4,050,000 is needed for completion of construction.

Question: When do you expect to move into the facility?

Answer: Construction is scheduled for completion by early 1992. We could to move into the facility around March, 1992.

Question: What resources does the Service need to equip, furnish, and move into the facility?

Answer: An additional $2,600,000 is needed for furnishings and equipment of this laboratory following construction, and moving costs are estimated at $1,250,000.

Wetland Loss

Question: While there is a pressing need to address wetland losses in coastal Louisiana, I realize there are also significant losses of coastal wetlands occurring along the entire Gulf of Mexico coast, as well as tremendous losses of bottomland hardwoods throughout the southern states. What is the magnitude of these losses?

Answer: The greatest amount of loss for coastal wetlands throughout the United States is occurring in the Gulf of Mexico region (523,800 acres to date). This area represents about 90-95% of all coastal marshes lost per year. Coastal Louisiana, which has 40% of the coastal marshes in the continental United States, suffers 80% of the nation's coastal marsh losses (40 to 60 square miles) per year. Other areas in the Gulf region, which are experiencing high loss rates, based on our data, are Galveston Bay, TX, which lost 27,500 acres or 17% from the mid-1950's to late 1970's; Mobile Bay, AL, - 16,300 acres or 36%; panhandle of Florida - 8,000 acres or 43%; Mississippi coast - 6,000 acres or 8%; and Tampa Bay - 14,000 wetland acres or 19%, plus 18,000 acres or 44% of seagrass beds. These wetland loss figures are based on data from the 1950's to the late 1970's.

The Lower Mississippi Alluvial Plain, commonly called the Delta, extends 600 miles from the confluence of the Mississippi and Ohio Rivers at Cairo, Illinois to New Orleans, and encompasses seven states. Eighty percent of the original 24 million bottomland hardwood forested wetland acres have been lost.

Moreover, 2% (104,000 acres) of the remaining 5.2 million acres are presently being lost annually with a predicted loss of 1.5 million acres by 1995.

Bottomland hardwood losses are not confined to the Mississippi River Delta. Oklahoma, with an original 2.2 million bottomland hardwood acres, has lost 85% of that resource. Today Oklahoma has 330,000 acres left. Texas has lost 63% of its bottomland hardwood habitat (a decrease from 16 million to 6 million acres), North Carolina lost 500,000 acres between 1955 and 1974, and South Carolina lost 20% of its bottomland hardwood habitat between 1952 and 1985.

Question: How will your current wetlands research program based in Louisiana address the losses of coastal wetlands in Louisiana, Texas, Mississippi, Alabama, and Florida?

Answer: Research on the processes of wetland loss will be focused on Louisiana, where most of the losses have occurred. Although some of the mechanisms of loss are similar throughout all the Gulf States, some loss problems are unique, based on local hydrodynamic and geochemical conditions in each system. Research on processes of loss in Louisiana will be transferable to some extent and to some scales, but with caution and recognition of these inter-regional differences.

The only Service research on coastal wetland loss outside of Louisiana is on seagrass distribution changes in the Laguna Madre of Texas. Other Gulf wetland loss efforts by the Service, such as the updating of the wetland data base for Galveston Bay, TX, and Mobile Bay, AL, are being funded primarily by other Federal and State agencies. Lastly, the Service has identified coastal wetland loss issues for Florida, Alabama, Mississippi, and Texas through interaction with various public and private entities.

Question: Are the losses of bottomland hardwoods in the southern states, particularly Louisiana, being addressed adequately?

Answer: Losses of bottomland hardwoods in the southern states are not being adequately addressed. Roughly 80% or 19 million acres of bottomland hardwoods have been converted to agriculture in the lower Mississippi River valley alone. Although efforts continue within the Service and elsewhere to restore converted bottomlands back to forested or moist soil wetlands, little is documented on the success of these efforts or the means to maximize success through proper management. Improved coordination is needed among the Service, the Forest Service and the Corps of Engineers' Waterways Experiment Station to develop a coordinated research approach to address these problems.

A small USFS research program, based in Stoneville, MS, is currently focused on silvicultural research on bottomland hardwood species (regeneration, timber stand management, etc.). The USFS has also established a number of plots in bottomland hardwoods that are inventoried every ten years for species composition, tree growth, etc. The Army Corps of Engineers is completing a large project in the Cache River basin, Arkansas, to examine selected forested wetland functions, values, and processes. These efforts will form the background and baseline for proposed coordinated research among these two agencies and the Service.

Question: Does the Service need additional resources to address these problems?

Answer: In order to adequately address these bottomland hardwoods problems, the Service would need the resources listed below. These resources would enable the Service to increase its efforts in habitat restoration, acquisition, monitoring, and validation. More importantly, the Service would increase its efforts in the public education arena. Specific research needs that would be met include:

1. Developing current spatial trends, patterns of loss, and loss rates of bottomland hardwood ($400K/yr, 3 FTEs, 4 years+),

2. Developing innovative, effective, and economical ways to restore converted agricultural lands to forested or moist soil wetlands ($200K/yr, 2 FTEs, 4 years),

3. Developing best management practices for greentree reservoirs and moist soil impoundments ($200K/yr, 2 FTEs, 4 years),

4. Investigating ways to maximize waterfowl food plants and minimize weed species in moist soil impoundments ($250K/yr, 2 FTEs, 4 years), and

5. Constructing models to predict impacts of changing hydrology and management on bottomland landscapes ($200K/yr, 2 FTEs, 4 years).

Pintail Duck Research

Question: I note that the Administration is proposing increases for Pintail duck research. In previous years I have encouraged the Service to address the needs of this dwindling species, particularly along the Louisiana coast. How much of the proposed research in FY 1991 will be conducted along the wintering grounds of the Gulf Coast?

Answer: Increased research proposed for FY 1991 includes $250,000 for research wintering pintails in the Gulf Coast region and $250,000 for additional research on the breeding grounds and on wintering areas in California and Mexico. Base funding of $450,000 supports ongoing research on breeding pintails in Alaska, on wintering mortality in California, and analysis of banding records. With the total of $950,000 research will be underway in all important pintail breeding and wintering areas.

Global Warming

Question: Global warming could have serious consequences for coastal wetlands and estuaries, and the fish and wildlife resources that are dependent upon these habitats. I note that you have proposed increases for research on global warming and as I understand it your highest priorities will be along the Gulf and Atlantic coasts. What research will be done, and what role in this research do you see for the National Wetlands Research Center in Lafayette, Louisiana?

Answer: For FY 91 the Service has proposed a new research initiative to study the impacts of global warming on fish and wildlife and their habitats. The initiative will have two major thrusts: to improve monitoring of selected key fish and wildlife species and their habitats to detect and quantify the onset effects and magnitude of global warming, and an experimental study to understand the effects of global warming caused sea level rise on coastal wetlands.

The National Wetlands Research Center (NWRC) will play a central role in this research. It will identify key wetland plant and invertebrate species that are likely to be adversely affected by global climate changes involving increasing temperature, carbon dioxide, sea level, and ultraviolet radiation and increases in climatic fluctuations and extreme weather events. Effects and impacts of these factors will be investigated in controlled laboratory and greenhouse studies at NWRC's new facility in Lafayette; complementary field studies will be conducted to encompass coastal wetland communities on the Gulf and south Atlantic coasts. Spatial habitat information and GIS data bases will be improved and expanded to allow for long term monitoring and comparative studies on key wetland communities in National Wildlife Refuges in these regions.

NWRC will also conduct landscape-level analyses using GIS and modeling techniques to expand existing wetland models for prediction of habitat changes and the consequences of these to fish and wildlife resources. The wetland communities to be emphasized are those that provide essential habitat for wintering waterfowl; they include fresh, brackish and salt marshes, submerged aquatic vegetation, forested wetlands and bottomlands, and benthic invertebrate communities.

Natchitoches Fish Hatchery

Question: As you know, I am very interested in the Natchitoches Fish Hatchery. Please provide me with estimates of fish production at the hatchery, broken down by type of fish for FY 1989, FY 1990, and FY 1991. Please use actual numbers where available.

Answer: The actual, scheduled, and proposed fish production by species for the requested fiscal years is as follows:

Fish Species	FY 1989 Actual	FY 1990 Scheduled	FY 1991 Proposed
striped bass	586,000	1,358,000	1,375,000
striped bass hybrids	598,000	-0-	-0-
blue catfish	294,000	150,000	150,000
channel catfish	365,000	-0-	-0-
flathead catfish	-0-	12,000	12,000
bluegill/redear sunfish	950,000	-0-	- 0-
Florida largemouth bass	493,000	255,000	255,000
paddlefish	-0-	*	*
Total	3,286,000	1,775,000 **	1,792,000 **

* Currently, paddlefish culture is in the developmental stage and distribution numbers cannot be determined.

** Fish production has been redirected toward the restoration of Gulf coast striped bass. The Service and the Louisiana Department of Wildlife and Fisheries have entered into a Memorandum of Understanding that establishes production goals for Natchitoches Fish Hatchery.

Question: Last year, I requested that $500,000 be earmarked for badly needed repairs to the hatchery. Which repairs did you address with the funding?

Answer: Highest priority maintenance and equipment needs are being addressed with the $500,000 provided in FY 1990. Seven projects are now in the engineering planning and design stages. An engineering review team will visit the hatchery in May to make final planning and design recommendations. Current plans are to award contracts for these projects in late summer and early fall. The seven projects are:

Rehabilitate main drainline	$ 50,000
Provide electricity to ponds	110,000
Enlarge holding house	75,000
Stabilize Cane Creek bank	15,000
Rehabilitate existing office	30,000
Rehabilitate aquarium building	50,000
Repave drives and roadways	60,000
Total	$390,000

The following projects do not require engineering assistance and are now being completed by field station personnel:

Backup generator (will be purchased after holding house is enlarged)	$ 15,000
Install alarm system	5,000
Vehicle replacement	13,000
Purchase riding lawnmower	13,000
Purchase microcomputer	5,000
Building maintenance	10,000
Regravel pond levee roads	5,000
Purchase aerators for 10 ponds	10,000
Replace fish distribution truck & tank	34,000
Total	$110,000

Question: What repairs are left to be done? Please list in order of priority.

Answer: A number of maintenance, construction, and equipment needs remain unfunded. An estimated $2.6 million is needed to rehabilitate all 53 ponds, including resloping pond banks and replacing pond kettles and valves. Several equipment items are needed to improve the overall efficiency of the hatchery. The following is a list in priority order of the remaining maintenance, construction, and equipment needs:

Purchase aerators for 30 ponds	$ 30,000
Replace tractor	20,000
Rehabilitate pump house	15,000
Replace equipment storage building	60,000
Rehabilitate 53 ponds	$2,600,000
Total	$2,725,000

Calcasieu Lake Marsh Management Plan

Question: I understand that officials of the U.S. Fish and Wildlife Service recently met with interested citizens and local officials in Louisiana to discuss a serious problem in Calcasieu Lake. This problem involves inadequate implementation of a marsh management plan that was developed by the Cameron Creole Watershed Steering Committee.

Please briefly describe the problem and outline what the Fish and Wildlife Service is doing to rectify this situation.

Answer: Brown and white shrimp, blue crabs, menhaden, spots, redfish, and croakers use Calcasieu Lake and adjacent estuarine marshes. These marine species are a major economic resource of Cameron Parish. The operation of water control structures for the Cameron Creole watershed has become a major concern of the commercial fishermen and shrimpers. These structures are located in bayous and waterways that until recently were unobstructed. The structures enable control of water levels and salinities in a manner which will rejuvenate marshes to a more productive stage. Commercial fishermen are concerned that structures are not opened at appropriate times to allow desirable ingress and egress of these marine species.

The project area encompasses approximately 64,000 acres of which 14,926 acres is the East Cove unit of the Sabine National Wildlife Refuge. The Miami Corporation owns the major portion of the remaining acreage within the watershed. A public meeting was conducted on the issue in Lake Charles, Louisiana on March 6, 1990, with about 200 people present, including representatives of the Fish and Wildlife Service.

The Cameron Creole Watershed Project was authorized, planned, and constructed by the Soil Conservation Service under the Watershed Protection and Flood Prevention Act (P.L. 566). The original flood control project was sponsored by four local organizations (Cameron Parish Gravity Drainage District Numbers 3 and 4, Gulf Coast Soil and Water Conservation District, and Cameron Parish Police Jury). Construction of 19 miles of levee and 5 large water control structures was initiated in 1962 and completed in April 1989 at a cost of $9.8 million.

A work plan agreement was signed in 1962 and amended in 1971, in which the Service assumed operational responsibility for the water control structures along Calcasieu Lake consistent with a management plan; and the sponsors agreed to maintain the levee and water control structures consistent with a maintenance plan. In the original work plan agreement prepared in 1962, the Service agreed to provide the operations manpower for the then proposed one lakeshore structure to be located on Sabine National Wildlife Refuge. However, due to environmental concerns and the need to provide for ingress and egress of marine organisms between Calcasieu Lake and the marshes, the final project and agreement contained five lakeshore structures (three of which are on refuge lands) with time consuming operation methods.

One refuge employee has been provided to carryout Service responsibilities related to the project since 1983. This has proven to be insufficient to do necessary biological monitoring and needed management within the watershed, plus efficiently operate the structures which were completed in 1989. The overall needs of the area will require at least two additional personnel to adequately monitor water quality, vegetative changes, ingress and egress of estuarine dependent marine organisms, and to manipulate the water control structures at the appropriate times. These positions are currently being filled.

Costs related to additional personnel, equipment, and other needs amount to an estimated $175,000 for initial expenditures. Annual operating costs thereafter are estimated at $105,000 per year. The Miami Corporation has agreed to provide up to 1 1/2 man years of effort to assist with the project until the Service can provide adequate staffing. This will be done under a North American Waterfowl Management Plan partnership agreement. Additionally, the Service is exploring modifications to ways of raising the gates on the structures to provide for more efficient and practical operation. A cost estimate for this conversion (which should be covered by or at a minimum shared by other agencies/cooperators) should be available soon.

The primary interest of the Fish and Wildlife Service in this project is to protect refuge marshes from deterioration from salt water intrusion which was accelerated by a Corps of Engineers project that increased the depth and width of the ship channel in Calcasieu Lake. Approximately 30,000 acres of vegetated marshes have deteriorated to open water since the 1950's. Vegetation and salinities will be restored through proper manipulation of the newly completed water control structures within the project area to emulate as nearly as possible conditions that existed in 1971 before the adverse impacts of the enlarged ship channel changed fresh water and brackish water marshes to salt water marshes. Estuarine species, waterfowl, muskrats, alligators, nongame birds, and freshwater fish species will benefit as well as the people who use and enjoy these species.

Louisiana Black Bear

Question: Please provide me with a status report on your efforts to list the Louisiana Black Bear as an endangered species.

Answer: A proposal to list the Louisiana black bear as a threatened species has been published in the Federal Register (June 21, 1990). Following the close of the public comment period, the Service will make a final decision on the listing of the Louisiana black bear.

Little Pecan Island

Question: Please provide me with a status report on your proposal to establish a new national wildlife refuge at Little Pecan Island in Louisiana.

Answer: The Fish and Wildlife Service has halted planning for the Little Pecan Island National Wildlife Refuge based on information received during public review of the Draft Environmental Assessment and comments received by the Service during the public meeting held in Cameron, Louisiana, on January 22, 1990. The major factor in the decision not to proceed is the nonavailability of key wetlands adjacent to Little Pecan Island, which the Service views as critical to the success of the proposal.

An alternative voiced by the public was to leave the Cameron Parish lands under private ownership to be managed primarily as a waterfowl hunting area. The Service would support an acceptable private Joint Venture under the North American Waterfowl Management Plan and would cooperate with the Louisiana Department of Wildlife and Fisheries in providing technical assistance to private landowners seeking to protect wetland areas used by wintering and migrating waterfowl.

QUESTIONS SUBMITTED BY SENATOR PATRICK J. LEAHY

Cooperative Research Units

Question: Is the Service working actively to implement the language in the FY 1989 Interior Appropriations law that resulted in an agreement to establish a new Fish and Wildlife Cooperative Research Units at the University of Vermont?

Answer: In FY 1989, Congress directed the Service to open a new Cooperative Fish and Wildlife Research Unit in Vermont. By the end of FY 1989 the Service had completed and signed a cooperative agreement with the University of Vermont and the Vermont Department of Fish and Wildlife. The agreement specifies that the Service will provide three Federal employees to staff the Vermont Unit.

Question: What is the Service's timeframe for bringing the Unit up to a full staff of three research scientists?

Answer: It is anticipated that two positions, the Unit Leader and one Assistant Leader, will be filled from existing funds, and we expect to full them this fiscal year. One vacancy will be retained at the Unit until sufficient funding is identified.

Question: What are the prospects right now for hiring an experienced unit leader in the near future?

Answer: Recruitment for the Unit Leader began at the end of FY 1989. As cooperators, the University and State agencies assisted the Service in its selection of employees by interviewing and recommending selection to the Service. A selection was made and the position offered in December, 1989, but the candidate declined to accept the position. Since then, the three cooperators have been working together in an effort to identify other acceptable candidates. Two interviews were held in March. The position is anticipated to be filled during FY 1990.

Question: Are sufficient funds available in the Service's FY 1991 budget request to insure that the Vermont Unit will receive a full $200,000 allocation in the coming fiscal year to allow it to staff up fully?

Answer: No, sufficient funds would not be available in the FY 1991 budget to fill the last Vermont position.

Question: If the answer to question #2 is "no", then how much additional funding will Congress be required to add to the research account of the Service's FY 91 Budget to staff the Vermont Unit at its full strength?

Answer: An additional $60,000 would be needed in FY 1991 to staff the Vermont Unit at its full strength.

Question: It is my understanding that, due to staffing dislocations at the Fish and Wildlife Cooperative Research Unit in Amherst, MA, important bear research and tagging work in Bennington and Rutland Counties, Vermont may be discontinued. Is this the case?

Answer: The termination of the Massachusetts Coop Unit's participation in the Vermont black bear study was not due to staffing dislocations at the Unit. Instead, the Massachusetts Unit's participation ended when the study was not funded.

Question: Would it be possible for the Service to direct that this bear habitat work continue out of Amherst until the Vermont Coop Research Units is up and running? I would appreciate your investigating this and advising me of the prospects.

Answer: The Massachusetts Unit staff could continue participation in the study if the study is funded. Upon conclusion of its efforts, Massachusetts left the bears tagged with radio collars in the event funding should be forthcoming in the near future. However, the study cannot be done without funding from the Vermont interests.

Vermont Hatcheries

Question: It is also my understanding that two national fish hatcheries located in Vermont-- the White River National Fish Hatchery and the Pittsford NFH-- have substantial unfunded maintenance needs. In the case of White River

NFH these estimated needs total approximately $200,000; in the case of Pittsford NFH, they total approximately $400,000. Does the Service's FY 1991 budget request for hatchery maintenance include sufficient funds to address these deferred maintenance needs?

Answer: The FY 1991 President's budget includes approximately $6.5 million to address hatchery maintenance needs nationwide. The requested funding will meet the highest priority maintenance needs of Service hatcheries but will be inadequate to address all deferred hatchery maintenance needs, including those at White River and Pittsford National Fish Hatcheries. At the present time, the Service is revising its maintenance needs and formulating its priorities for the distribution of FY 1991 hatchery maintenance funding.

The Service is currently in the process of developing a nationally prioritized list of maintenance needs; at this time, only regional priorities are established. The revised lists of maintenance needs for the White River and Pittsford hatcheries are as follows:

White River National Fish Hatchery:

Project	Need by Appropriation Account Resource Management	Construction
Routine generator maintenance	$ 5,200	
Replace well pump impellers	12,000	
Replace water supply/treatment components	82,800	
Replace water intake structure		$1,000,000
Replace inadequate fish feeding system	100,000	
Install new well and pump		64,200
Sealcoat blacktop	65,000	
Repair leaking hatchery roof	6,200	
Replace radiator on generator	36,400	
Replace effluent pond aerator	2,000	
Replace worn fish pump	19,000	
Replace raceway dam boards	9,500	
Replace broken pond and raceway covers	55,000	
Replace pickup	13,500	
Replace van	11,000	
Repair cracks in blacktop	70,000	
Replace worn shop equipment	6,400	
Replace tractor	25,000	
Replace domestic hatchery boiler	10,000	
Install missing hatchery insulation	4,500	
Paint hatchery/office walls	15,000	
Replace worn office carpet	6,000	
Insulate hot water pipes	500	
Total	$555,000	$1,064,200

Pittsford National Fish Hatchery:

Project	Need by Appropriation Account Resource Management	Construction
Replace sedan delivery	$ 11,500	
Repair raceways and supply pipelines (Phase 1)		$2,570,000
Replace fish culture equipment	157,000	
Replace raceway covers	93,000	
Repair raceways and supply pipelines (Phase 1)		2,570,000

Pittsford National Fish Hatchery:

Project	Need by Appropriation Account Resource Management	Construction
Repair wing walls		44,000
Repairs to hatchery/office building	19,000	
Repair fish display pond	10,500	
Repair and resurface blacktop	30,000	
Repair pump house	1,100	
Replace lawn tractor	3,500	
Paint buildings and repair roofs	5,200	
Replace farm tractor	11,500	
Total	$342,300	$5,184,000

Ecological Service Office in Vermont

Question: Finally, I want to let you know of my accelerating attempts to increase Federal involvement in pollution research, monitoring and mitigation efforts on Lake Champlain, one of the Nation's largest and most significant lakes. These efforts will involve the Environmental Protection Agency, the Army Corps of Engineers, the Department of Agriculture and, I hope and expect, the Fish and Wildlife Service. All of these agencies will have a role in Champlain water quality efforts upon the passage of the Lake Champlain Special Designation Act, which I introduced on February 6, 1990, with my colleagues Senators Jeffords, D'Amato and Moynihan.

I would like the Service to be as complete a player as possible in my initiative to protect Lake Champlain. For this reason, I would like to explore with you the prospects for opening a Fish and Wildlife ecological services office in Vermont, on or near Lake Champlain. It is my understanding that the Service's ecological services offices have the authority to work on environmental projects cooperatively with state universities and state and local governments. Is this the case?

Answer: Yes. The Fish and Wildlife Act of 1956, Fish and Wildlife Coordination Act, Endangered Species Act, National Environmental Policy Act, Food Security Act of 1985 (Farm Bill), Clean Water Act, Watershed Protection and Flood Prevention Act, Migratory Bird Treaty Act, Emergency Wetlands Resources Act, Federal Power Act, Electric Consumers Protection Act, Public Utility Regulatory Policy Act, Comprehensive Environmental Response, Compensation, and Liability Act (Superfund), and other statutes provide ample authority for our Fish and Wildlife Enhancement offices to work with state universities and state and local governments.

Question: How many of these offices are operating now, nationwide?

Answer: The Fish and Wildlife Service (Service) currently has 52 Fish and Wildlife Enhancement field offices nationwide, and 11 satellite offices under the management of the larger field offices.

Question: How many are in New England?

Answer: We have one field office located in Concord, New Hampshire that is responsible for Fish and Wildlife Enhancement activities in the six New England states. In addition, we opened a satellite office in Orono, Maine in FY 1990 that is scheduled to be closed in 1991. A temporary one person office was also recently opened on an existing national wildlife refuge in Rhode Island as part of the Service's Bay/Estuary Program to conduct the Northeast Coastal Study.

Question: How many new ecological services offices have been opened over the past three years?

Answer: During the past three years, the Service has opened a new satellite office in Maine and upgraded satellite offices to full field offices in New Jersey and Kansas. The Service has also opened new offices during FY 1990 in Maryland, Rhode Island and Delaware as part of our Bay/Estuary Program, although their activities are distinct from those occurring in other Fish and Wildlife Enhancement field offices.

Question: Typically, at what level are they staffed, and what is an average annual operating budget for one of these offices?

Answer: The typical field office has eight to thirteen full-time biologists and two secretarial support staff. These stations have operating budgets in the range of $700,000 - $900,000 per year with some of the larger field offices exceeding $1,000,000 or more per year. Fish and Wildlife Enhancement satellite offices are typically staffed with less than four individuals including secretarial-clerical support. The typical satellite office in the northeast has two to three biologists and a part-time secretary. The typical budget for one of these satellite offices is about $250,000 with a range of $100,000 - $400,000.

Question: Please advise me of your view on the prospects of starting such an office on Lake Champlain in Vermont.

Answer: The Concord field office has been actively involved in biological resource protection and restoration efforts within Vermont, including the Lake Champlain ecosystem. A full field office in Vermont would not be justified at this time based on budgetary and personnel outlays, the prospects appear better for opening a satellite office considering the existing and potential work loads, and the probability of improving Service operational effectiveness in protecting and improving Lake Champlain and vicinity biological resources. However, funds and personnel ceilings are not budgeted to staff and operate such a facility.

Another option would be to expand the Concord office that it could be dedicated to increasing Service involvement in fish and wildlife resource issues at Lake Champlain and vicinity.

QUESTIONS SUBMITTED BY SENATOR DENNIS DeCONCINI

Law Enforcement

Question: Director Turner, one of my leading causes in the Senate is the fight against drugs. As you know, Arizona has a significant amount of public lands, and therefore, I am very interested in hearing about the law enforcement efforts of the public land agencies, specifically the Fish and Wildlife Service.

In your budget justification you cite an example of a documented incident of drug purchases related to wildlife sales. Would you, Director Turner, characterize this as a growing problem?

Answer: The relationship between drugs and illegal wildlife trafficking has been known to the Service for a number of years. Our Special Agents have made several cases in which the subjects were involved in both illegal drugs and wildlife trade. While we are not aware of any increase in this activity, it is still occurring.

Question: Is there a specific region in the U.S. where a majority of these incidents take place?

Answer: The Service has not experienced the problem as more prevalent in any one region.

Question: Were there any in Arizona?

Answer: We cannot cite a specific example of this occurring in Arizona. However, during a major undercover case operated out of Arizona, the Service seized 65 peyote cactus from an individual in Texas.

Question: Without divulging sensitive information, could you please share with the committee the steps the Service is doing to enhance its ability to combat this activity?

Answer: The Service conducted an in-depth drug enforcement training seminar for first line supervisors during April 1990. All Service Special Agents and Refuge Officers will receive additional drug enforcement training through the annual in-service training program. Several agents have received advanced training at the Department of Justice undercover drug school or our own undercover training program. The Service is also negotiating a series of cooperative agreements with state and Federal law enforcement agencies to provide mutual assistance in curtailing illegal drug activity.

Question: In FY90, did the Service have sufficient funding to keep law enforcement personnel fully operational throughout the entire year? If not, why?

Answer: FY 1990 funding permitted the Service to address highest priority enforcement needs only. As a result of inflation, salary/benefit increases, increased moving costs, etc., the law enforcement program has curtailed agent expenditures for travel and supplies and delayed replacement of equipment.

Question: Does the FY91 budget request contain sufficient funding to keep law enforcement personnel operational throughout the next fiscal year?

Answer: The Service believes that by carefully establishing law enforcement priorities which target illegal activities having the greatest impact on the wildlife resource, it will be able to insure a sufficient level of presence for FY 1991. However, the Service will continue to limit expenditures for travel, supplies, and equipment.

Question: If not, what level of funding will be required to meet this goal?

Answer: In 1984, in response to the Senate Appropriations Committee's request, the Service developed a funding model detailing the costs needed to support its field agents. The model identifies costs associated with personnel compensation (agent's salary and benefits and clerical support), travel and transportation, vehicle operation, and other related expenses (i.e., storage of evidence/equipment, supplies, relocation allowances, etc.). Funding is still allocated using this "per-agent" method. The President's Budget provides approximately $80,000 for each of the Service's field agents in FY 1991. Several pay-related increases, such as absorption of the FY 1990 and FY 1991 pay raises, high benefit rates (40-45%) for agents covered under the Federal Employees Retirement System and the new law concerning administratively uncontrollable overtime has reduced available operational funds. In 1984, the Service estimated that $4.5 million was spent for operational support. In FY 1991, approximately $2.5 million will be available for operations including increased administratively uncontrollable overtime costs. The Service believes $6.6 million is needed to fund agent operations at a level where they can travel as necessary to conduct investigations. That funding level would provide each agent with approximately $32,000 for operations (including increased administratively uncontrollable overtime costs).

Question: Does the Service's drug control program cooperate with the federal, state and local law enforcement agencies in the areas they are involved? If so, to what extent?

Answer: Yes, the Service is actively negotiating cooperative agreements with federal, state, and local law enforcement agencies throughout the country.

For example, the Cabeza Prieta National Wildlife Refuge in Arizona is party to a tri-county law enforcement cooperative program which unites all state, federal and local law enforcement agencies in a mutual enforcement effort to combat drug smuggling and other crime throughout the area. Chassahowwitzka National Wildlife Refuge in Florida has joined the Blue Lightning Strike Force to aid local, state, and other Federal agencies in the interdiction of narcotics being smuggled into the country. Refuge officers regularly assist the Customs Service and have been designated as Customs Officers for purposes of narcotics smuggling prevention. These are just a few examples of the role SErvice employees play in the war on drugs.

Question: Now that the Service's drug control program has been operational for a full year, you have obviously learned a great deal more about drug related incidents with respect to wildlife issues. Have there been any new problems or issues which have arisen that the Service had not anticipated?

Answer: No. The Service has been aware of the connection between the illegal drug and wildlife markets for a long time and has traditionally taken the appropriate enforcement action where such activity was uncovered. The new emphasis increased the priority of Service law enforcement activities against illegal drug trafficking.

Question: As you know, Congress last year appropriated $750,000 to implement the Service's drug control program. How was that money distributed?

Answer: After sequestration, the $750,000 was reduced to $740,000. Of the $740,000, $371,000 was used for drug control activities conducted by law enforcement agents and $369,000 was allocated for drug control activities on refuges.

Regions	Law Enforcement	Refuges and Wildlife
Region 1:	$41,000	$ 66,000
Region 2:	$42,000	$110,000
Region 3:	$41,000	$ 22,000
Region 4:	$41,000	$110,000
Region 5:	$41,000	$ 34,000
Region 6:	$42,000	$ 22,000
Region 7:	$42,000	
Region 9:	$81,000	$ 5,000
	$371,000	$369,000

Question: How much of that money went to support field operations?

Answer: Within the annual allocation to Law Enforcement, $290,000 was allocated directly to field operations. Regional allocation is shown in the table above.

Of the $369,000 provided to the Division of Refuges, $246,000 was provided to field stations. $123,000 was retained by Regional offices to make centralized purchases on equipment for field stations (e.g. sidearms, body armor, surveillance equipment, and radios), and on training for field personnel.

Question: How much of that money stayed in Washington?

Answer: Within the Division of Law Enforcement, the Washington Office was allocated $81,000: $75,000 for the Federal Law Enforcement Training Center located in Brunswick, Georgia, to provide training and materials for the entire agent force, and $6,000 for educational materials and test kits.

Within the Division of Refuges, $5,000 was retained in the Washington Office and has been given to the Law Enforcement Techniques Division at the Federal Law Enforcement Training Center (FLETC) in Glynco, GA. The money has been used to purchase supplies which will be given to trainees at FLETC (e.g. credential cases, badges), and for equipment which will be used to support the training operations there.

Question: Could you please provide the committee a detailed breakdown on how that money was spent?

Answer: The following table provides planned use of the drug funding. Approximately 90% of the total amount has been expended.

Travel & Per Diem	$102,000
Training	120,000
Equipment	201,000
Radio Tower Rental & Service	11,000
Telephone (Bills/Purchases)	6,000
Salaries	21,000
Aircraft Expenses	6,000
Weapons & Ammunition	107,000
Educational Material & Test Kits	6,000
Vehicle Leasing	11,000
Supplies/Operational Costs	149,000
Total	$740,000

Question: Director Turner, as you know Congress is considering legislation that will designate four refuges in Arizona as wilderness. I'm particularly concerned about the Cabeza Prieta National Wildlife Refuge because it is along the U.S./Mexico border and, as I'm sure you know, this is an area of heavy drug trafficking activity.

I'm interested in knowing how this legislation impacts law enforcement activities in these refuges. What has been the Service's policy concerning law enforcement activities in these refuges to date?

Answer: In the 16 years that have passed since the first proposal of these areas as wilderness, our management, including necessary and appropriate law enforcement efforts, has been directed toward preserving the wilderness values of the refuge areas. Because of the very nature of the terrain, isolation, and harsh climate, law enforcement, particularly on the Kofa and Cabeza Prieta Refuges, is of critical concern to human safety.

Question: Will these policies change as a result of wilderness designation?

Answer: We do not envision our responsibility to safeguard the public to be in any way lessened by the designation of wilderness. The Service does not anticipate a reduction of law enforcement activities, either by our own staff or by other agencies, on Arizona refuges as a result of wilderness designation. Our cooperative efforts with other agencies such as the Border Patrol, Customs Service, and Drug Enforcement Agency are also expected to continue undiminished. Through such instruments as Interagency Agreements or Special Use Permits, the Service will continue to support the necessary activities of these agencies at all levels where appropriate.

Question: Does there need to be language in the legislation designating these refuges as wilderness clarifying Congress' intent regarding law enforcement?

Answer: The Service does not believe that such language is necessary; nor does the Service believe that such language would effect a better working relationship with these agencies in attaining our mutual law enforcement goals. The wilderness designation will not preclude Law Enforcement activities.

Question: I understand that with the enactment of P.L. 101-173, the Service will experience increased overtime costs for law enforcement personnel.

What will be the additional costs in FY 91 of administrative uncontrolled overtime as a result of the enactment of P.L. 101-173?

Answer: The Service estimates that P.L. 101-173 will cost an additional $750,000 for administratively uncontrollable overtime in FY 1991.

Question: Will these additional funds come out of the Law Enforcement operations budget?

Answer: Yes, the additional costs will have to be absorbed within the Law Enforcement operations budget.

Question: If so, won't this impact the law enforcement capability of the Service?

Answer: Yes, it will reduce operational funds available to field agents for travel, training, equipment, maintenance, etc.

Question: What percentage of the total law enforcement operations budget will go to overtime?

Answer: The Service estimates that the increased administratively uncontrollable overtime will cost approximately $4,000 per agent. This would total $750,000 which is 30 percent of the planned $2.5 million law enforcement operations budget.

Question: Why not fund this additional overtime cost from some other account so as to not impact the law enforcement operations of the Service?

Answer: The FY 1991 budget was developed to address the highest priority needs of the Service. Withdrawing $750,000 from any other Service program to cover this additional overtime cost would adversely impact that program.

Buenos Aires National Wildlife Refuge

Question: I have expressed previously my concerns about the condition of the visitor center at the Buenos Aires National Wildlife Refuge.

Does the Service have any plans to renovate this facility?

Answer: The Service has developed plans to conduct major renovations of the historic ranch house to serve as a combination office/visitor center for the refuge. These renovations include new plumbing, wiring, heating, and cooling systems in addition to provision of interpretive exhibits and public use facilities. Repairs to the two and one half mile entrance road which leads to the office/visitor center complex, and an auto tour loop would also be included in the renovation proposal.

Question: What is the current condition of this facility?

Answer: The facility now is maintained in the condition in which it was first acquired by the Service. It is a large, vacant house. It is used as a meeting facility when needed and is maintained to preserve its structural integrity. However, its use as a public facility is extremely limited.

Question: How do these inadequate facilities affect the visitor's experience at the Refuge?

Answer: Without a visitor center to serve as a focal point of the refuge, the public is not provided the opportunity for interpretation and education concerning the refuge's and Service's goals and mission. Recreationists can continue to visit areas of the refuge for dispersed and specific activities such as hunting and bird watching, but no facilities are provided to make their visit anything more.

Question: Is there funding in the FY 91 budget request to undertake these renovations?

Answer: Funding has not been requested in FY 91 for this work.

Question: If not, what would be required in FY 91 to commence work on these renovations?

Answer: It is estimated that $2,000,000 would be required to fund the renovation and interpretation proposal. It should be noted that this estimate is based on more intensive studies of the degree of renovation needed and has been increased from the preliminary estimated cost of $1,000,000.

Arivaca Creek

Question: I see in the budget justification that there is no funding for the acquisition of Arivaca Creek.

Why is this a worthwhile acquisition?

Answer: Arivaca Creek represents a diminishing natural resource in Arizona, a perennial stream with its associated cienegas (desert marsh) and riparian forests that has not been significantly altered by man's activities. Cienega streams and riparian forests have been reduced to less than one-quarter of their original extent in the southwest. Acquisition of Arivaca Creek would protect one of the highest quality riparian forest and cienega marshes remaining in southern Arizona. In addition, a number of animal and plant species of special concern would be protected by preservation of the Arivaca Creek system including the gray hawk, black hawk, Mexican garter snake, northern beardless tyrannulet, rose-throated becard, thick billed kingbird, and Cruz striped agave.

Question: Assuming that this acquisition is funded, will the purchases of this land be made only on willing seller/willing buyer basis?

Answer: In compliance with existing Fish and Wildlife Service policy, acquisition would be on a willing seller basis.

Question: Do you know of any circumstances where this would not be the case?

Answer: No such circumstances are known at this time. The environmental assessment also stated that acquisition would be on a willing seller basis.

Question: What amount of funding is required in FY 1991 to acquire these properties?

Answer: In FY 1991 $1,500,000 could be used to acquire 780 acres on Arivaca Creek from four willing sellers.

Payment to Counties

Question: The Refuge Revenue Sharing Act directs the Fish and Wildlife Service to make payments to counties based upon a revenue sharing formula. In the FY 91 budget request, the Service will only be making 80% of the payments that the counties are entitled to. This concerns me because even at the full amount, these payments only partially offset the lost property taxes to the counties. Why is the Fish and Wildlife Service only making 80% payments to counties this fiscal year?

Answer: The current law supposes that sharing of revenues from economic uses on refuges would largely offset loss of taxes, and if not, supplementary appropriations would be authorized. However, economic returns have been too low to support full calculated payments. In addition, the supplementary appropriations necessary to make full payments are not being requested in the President's budget due to the need to control federal spending. The Department of the Interior has been supportive of the Service's efforts in requesting the appropriations necessary to make full entitlement payments.

Question: What are the benefits of these payments to counties?

Answer: The Fish and Wildlife Service shares revenue with about 700 units of local government for lands it administers solely or primarily. These funds constitute a substantial share of the budget for many counties. They are particularly useful in that they may be used for any governmental purpose by the counties. Revenue Sharing payments have a major impact on the acceptance of our land acquisition programs. Local opposition can delay or prevent Land and Water Conservation proposals and it is critical to gain governor's approval of new Migratory Bird Conservation Fund projects.

Question: Why are other agencies, such as the Bureau of Land Management, able to make their full payments to counties and the Fish and Wildlife Service is not?

Answer: Appropriations, enabling the BLM to make full entitlement payments, have been requested by Bureau of Land Management for the past few years enabling BLM to make 95 to 100 percent payment. Full entitlement was paid by the Fish and Wildlife Service in FY 1981. Since that time Fish and Wildlife Service appropriations have remained relatively stable, while the calculated entitlements continue to rise due to the acquisition of lands and the reappraisal of lands.

Mexican Spotted Owl

Question: It is my understanding that the Fish and Wildife Service has a status review pending on the Mexican Spotted Owl. What is the status of this review?

Answer: The Service received a petition on December 22, 1989, to list the Mexican spotted owl as threatened or endangered. The Service published a 90-day finding that substantial information was presented that the Mexican spotted owl may be warranted to be listed on March 28, 1990. The Service is currently conducting the status review on the Mexican spotted owl. The twelve-month finding is due by December 22, 1990. The Service will make a decision on proposal for listing at that time.

Question: Are there any preliminary findings?

Answer: There are no preliminary findings at this time.

Question: Have there been any problems in conducting this review?

Answer: Yes, the large geographic area to be surveyed, and the sparsity of information have made this status review difficult to conduct.

Question: What is the timeline for this review?

Answer: The status review will be completed in October 1990. It will include the summer data for 1990, and will be coordinated with the U.S. Forest Service. The review must be completed and a finding must be made by December 22, 1990.

Question: As you prepared your FY 91-budget request, did you include an adequate level of funding to undertake the Service's endangered species activities associated with the Mexican spotted owl?

Answer: The Service included $21,800 under the Listing subcategory for the Mexican spotted owl in the FY 1991 budget. The Service did not include the Mexican spotted owl status survey among the projects to be funded during the preparation of the FY 91 budget, since at that time the petition had not yet been received.

Question: If not, what funding would be required in FY 91 to proceed in as timely a fashion as possible with these activities?

Answer: The Service could fund the status survey, coordinate with other Regions, Agencies, and Mexico, and put in place management programs for this species with $300,000 and 1 FTE for FY 1991. These additional programs would be needed for five subsequent years. If the species becomes the subject of a proposal for listing, these amounts may need to be increased.

Desert Tortoise

Question: On August 4, 1989 the U.S. Fish and Wildlife Service emergency listed the Mojave Desert tortoise as an endangered species. On April 2 the emergency listing for this species expired.

What is the status of the listing of this Mojave Desert Tortoise?

Answer: On April 2, 1990 the Mojave population was listed as threatened.

Question: What is the status of the Service's activities concerning the Sonoran Desert tortoise?

Answer: The Service's Region 2 is conducting a status review of the Sonoran Desert tortoise population. The current field season runs into the fall of 1990. Land use mapping studies are in progress. All Service refuges are doing intensive surveys for desert tortoise in Arizona. The Regional Director of Region 2 anticipates reviewing the data and making a decision on the Sonoran population by January 1991.

Question: Is consideration given in your budget request to the level of funding that will be needed to undertake the endangered species activities associated with the desert tortoise, both the Sonoran and the Mojave populations?

Answer: The FY 1991 budget request includes $ 311,100 for activities for all populations of the desert tortoise. However, since the listing of the Mojave population of the desert tortoise, the Service has re-evaluated its budgetary needs for activities associated with the desert tortoise and identified additional needs of $750,000/6 FTEs.

Question: If not, what level of funding would be needed in FY 91 to proceed with these activities in as timely a fashion as possible?

Answer: Additional budgetary needs for FY 1991 are $750,000 and 6 FTEs. These needs are distributed as follows:

Pacific Region (R1)	$200,000/3 FTE
Rocky Mountain Region (R6)	100,000/2 FTE
Southwest Region (R2)	250,000/1 FTE
Research Region (R8)	200,000
Total Service needs	$750,000/6 FTEs

These resources would provide for additional activities identified that include anticipated requests for consultation under Section 7 of the Endangered Species Act (Act), drafting a recovery plan for the Mojave population, recovery planning, anticipated requests for coordination of Habitat Conservation Plans under Section 10(a) of the Act, and research.

Mount Graham Red Squirrel

Question: As you know Director Turner, a great deal of attention has been paid to the Mount Graham Red Squirrel. Could you please bring the committee up-to-date with the Service's endangered species activities associated with this species?

Answer: The Service has been cooperating with the Forest Service in implementing the biological opinion. Specific activities include serving as coordinator on the Mount Graham red squirrel study committee, participating in discussions on the revised site plan for the observatory, assisting in the May census of squirrel middens, reviewing the University of Arizona's monitoring of red squirrels at the construction area for the observatory, and consulting with the Forest Service on recreational activities in Pinalinos.

Question: Is there sufficient funding in the FY 91 budget request to proceed with these activities?

Answer: A total of $30,000 is requested in the FY 1991 budget for the Mt. Graham red squirrel. Funding of recovery actions as specified by the biological opinion are largely covered by the University of Arizona and the Forest Service. An additional $50,000/1 FTE could be used to continue coordination activities and to provide additional assistance during construction of the observatory. Also, funds in the amount of $200,000 for FY 1991 and $125,000 for the subsequent 10 years could be used to begin captive propagation of Mount Graham red squirrels which will serve as back-up to the natural population to prevent extinction.

Question: Please define the respective roles of the Forest Service and the Fish and Wildlife Service in the efforts concerning the Mount Graham red squirrel?

Answer: The Forest Service role, as the agency which controls and manages the land base which is occupied by the Mount Graham red squirrel, is charged with the responsibility to conserve this species. They are responsible for implementing the actions required by reasonable and prudent alternative three of the biological opinion for the Mount Graham observatory.

The U.S. Fish and Wildlife Service assists the Forest Service in interpretation and implementation of the biological opinion. Also, the Service cooperates and coordinates implementation of recovery actions specified by the biological opinion. Upon completion of the recovery plan, the Service will take an active role in ensuring that the plan is implemented.

Question: Do you anticipate these roles changing anytime in the future? In FY 1991?

Answer: We do not anticipate that these roles will change in the future because the Forest Service has a mandate to manage the land base.

Question: What will be the additional funding needs for the Service in the event these roles do change?

Answer: If roles do change the Fish and Wildlife Service would need significantly more money to assist in recovery plan implementation. Approximately $350,000 would be needed to maintain research efforts and continue reforestation efforts.

Wilderness

Question: As I mentioned previously, Congress is considering legislation that will designate four refuges in Arizona as wilderness; the Cabeza Prieta NWR, the Kofa NWR, the Imperial NWR and the Havasu NWR.

Assuming that this legislation is enacted, do you anticipate any increased funding needs in these refuges as a result of wilderness designation?

Answer: Designation of portions of the Havasu and Imperial Refuges as wilderness is not expected to greatly expand public use or habitat management demands to the degree that funds would be requested to support those specific wilderness-based activities. However, the expanses of wilderness that would be provided at both the Kofa and Cabeza Prieta Refuges, totalling over one million acres, are such that management of both natural processes and public use would need to be greatly enhanced.

Question: If so, how much is needed in FY 91?

Answer: If the considered legislation is enacted in FY 91, Kofa NWR would need one additional FTE and $100,000. Cabeza Prieta NWR would require two FTEs and $150,000. Total funds in the amount of $250,000 would support the three FTEs and adequately provide for expansion of refuge programs to fully develop the potential for public use and appreciation of the unique wilderness values of these areas.

QUESTIONS SUBMITTED BY SENATOR QUENTIN BURDICK

Refuges

Question: I understand the Fish and Wildlife Service in preparing its FY91 budget request proposed constructing a carp control structure at the J. Clark Salyer NWR in North Dakota, but the request was not approved by the Office of Management and Budget. What is the current cost estimate of this structure and where does it rank on both the Region's and the Service's priority list of projects?

Answer: In its FY 1990 request to the Office of Management and Budget (OMB), the Service proposed to construct a carp control structure on the J. Clark Salyer National Wildlife Refuge in North Dakota, as part of the Souris River basin Flood Control Project. This structure is part of the mitigation package necessary to make the project compatible with the purpose for which the Refuge was established. The construction agency for the project is the U.S. Army Corps of Engineers. The Corps and the Service have agreed to fund the structure on a 50:50 basis. The Corps has indicated that they wish to issue a contract for the structure in the summer of 1990. The total cost for the structure is currently estimated by the Corps at $1,996,000, with the Service's share being $988,000. However, depending upon the specific construction bids received, the Service's share could range up to $1,200,000.

The project was excluded from the President's 1990 budget request, as only health and human safety projects were requested. In view of the priority placed in health and human safety projects, the Service did not propose funding for this project in FY 1991.

Refuge Revenue Sharing Fund

Question: Once again the Administration has requested less than full funding for the Refuge Revenue Sharing Fund. How much in appropriations would be necessary to fully fund this account in FY91?

Answer: It is estimated that an appropriation of $13,311,000 will be needed to make full payments to the counties in FY 1991 which are estimated at $16,935,000.

Question: What is the total amount of receipts projected to be collected from the refuges in FY91?

Answer: The Gross receipts collected in FY 1990 minus expenses of sales will be used, along with the FY 1991 appropriations, to make the FY 1991 Payments to the counties. The total amount of Gross receipts projected for FY 1990 is $5,990,000.

Question: What portion of the above amount is deducted for administration of the receipts program and what types of activities are included?

Answer: It is estimated that expenses of sales for FY 1990, which will be deducted from the gross receipts of $5,990,000 will be $2,366,000. Expenses incurred in connection with revenue-producing activities include salaries of foresters who cruise and mark timber for sale; salaries and supplies associated with maintenance of fences in support of grazing; costs associated with sale of surplus animals; and expenses involved in selling salmonid eggs and carcasses. Cost are also associated with collecting the refuge share of furs and crops, conducting land appraisals, administering the industrial complex at Crab Orchard National Wildlife Refuge, Illinois, and cooperative management (with the South Carolina Commission of Forestry) of forested habitat on Carolina Sandhills National Wildlife Refuge.

North American Waterfowl Management Plan

Question: The Chase Lake Project in North Dakota is a main component of the NAWMP. What is the status of this project?

Answer : **The Chase Lake Prairie Project includes 38 actions to be undertaken by a variety of public agencies, nongovernmental organizations and private landowners. These action items range from wetland acquisition to incentives for wetland habitat development on private land.**

As part of the Chase Lake Prairie Project, Ducks Unlimited and the Service have constructed 6 nesting islands in lakes on private land. Local landowners have placed more than 504 nesting bales and structures for ducks and giant Canada geese in private wetlands.

Local landowners have idled 1,750 acres, and delayed haying operations on 363 acres until after the peak duck and other ground-nesting game and non-game bird hatching period. Landowners, local wildlife clubs, the Service, and Ducks Unlimited, have cooperatively built 7 electric fences on private lands to protect ducks and other upland ground-nesting birds. In addition, the Service, working with landowners, has restored 552 wetlands containing over 1,000 acres and provided fencing materials for 7 landowners to develop beneficial grazing systems on 5,300 acres of pasture. Other parts of the Chase Lake Project include predation management on private and publicly owned islands, increased botulism control, and reintroduced pronghorn antelope, prairie chickens, and burrowing owls to existing native grasslands in the area. Nongame efforts will include habitat enhancement on public and private lands for the threatened piping plover, American avocet, common and black terns, Wilson's phalarope, upland sandpiper, marbled godwit, and willet.

The project is in year 2 of the 15 year plan. There are over 15 Federal, state, private conservation organization, and corporate partners and a growing number of private individuals cooperating in this Prairie Pothole Joint Venture project.

Question: One aspect of the plan is the development of a North American Wildlife Hall of Fame and Prairie Wetlands Interpretive Center in the area. What is the current time table for development of the center? Specifically, in what fiscal year does the Service plan to budget for the center?

Answer: The development of a North American Wildlife Hall of Fame and Prairie Wetlands Interpretive Center is one of the actions under the Chase Lake Prairie Project, but it will be undertaken primarily by funding sources other than the Service. We fully support the concept of a visitor center. The Service is an active partner in various other conservation education activities in the Chase Lake Prairie Project, but we have no time table for development, nor are we preparing any budget requests for the interpretive center.

Cooperative Research Units

Question: What funding level would be required in Fiscal Year 1991 to fully fund the 37 Cooperative Research Units that are currently designated and operating, including and specifying any funds required to compensate the Units for past budget cuts?

Answer: With the combination of the Massachusetts Fishery and Wildlife Units in Fiscal Year 1990, 40 Cooperative Fish and Wildlife Research Units are designated. The President's proposed Fiscal Year 1991 budget for the Cooperative Research Units includes a $650,000 increase, bringing the Fiscal Year 1991 total to $7,186,000. To fill all vacancies an additional $614,000 is needed for a total budget of $7,800,000.

Question: What funding level would be required in Fiscal Year 1991 to fully fund a new Fish and Wildlife Service Cooperative Research Unit?

Answer: It costs the Fish and Wildlife Service approximately $200,000 to establish a new Cooperative Research Unit. This figure includes salaries, benefits and moving costs for three Federal employees, and acquisition of equipment and vehicles for the new station.

QUESTIONS SUBMITTED BY SENATOR DALE BUMPERS

Sustainable Agricultural Research

Question: There is a strong link between sustainable agriculture and the efforts of the FWS to manage and improve nongame resources, aquaculture, range management, water quality and wildlife habitat. Wildlife exists in a great variety of farm habitats. A trend toward organic farming would produce diversity in crop types and smaller fields, benefiting many nongame and game birds. Farm workers can be told not to enter a freshly sprayed field, but wildlife species cannot be given the same warning.

Increasing the use of sustainable agriculture produces diversity in crop types and smaller fields, thus increasing wildlife habitat and benefiting both game and nongame resources. I see in your budget justification that funding is requested to increase research on the effects of agricultural contaminants in the Prairie Pothole areas. Also, as part of the wetlands initiative, the Service proposes to increase its' research program on the impacts of agricultural contaminants in FY 1991.

The Appropriate Technology Transfer for Rural Areas (ATTRA) in Fayetteville, Arkansas, could provide an excellent resource for these research programs.

Given the evidence of environmental damage by agricultural chemicals, don't you agree that the Fish and Wildlife Service's goals will be enhanced by ATTRA?

Answer: We agree that the information provided to the agricultural community by ATTRA will result in a significant level of improvement in fish and wildlife habitat conditions on private lands. Of considerable import is the fact that ATTRA is directly associated with agriculture, its professional staff represents many agricultural disciplines, and thus the credibility of the program is high. Profitability to the farmer and the maintenance of long-term productivity of the land are paired with both off-site and on-site values to the fish and wildlife resource.

Question: In the portion of your budget justification under Irrigation Drainwater, you state that "Environmental Contaminant personnel are responsible for biological portions of both reconnaissance and indepth study design, collection and preparation of biological samples, interpretation of residue data and preparation of departmental reports. This portion of the effort will indicate if and to what extent fish and wildlife resources are being adversely impacted by ongoing agricultural practices, particularly in the Western United States."

I agree that FWS research should be expanded to determine the extent of contamination in waterfowl from currently used agriculture chemicals, determine seasonal and cumulative effects on waterfowl production and nesting habitat, and determine effectiveness of buffer zones and other strategies for minimizing the migration and deposition of chemicals in wetlands.

Shouldn't ATTRA be further utilized by the Fish and Wildlife Service?

Answer: The Service supports utilization of ATTRA. The role of ATTRA is essentially technology transfer. As the results of Fish and Wildlife Service research program become available, ATTRA will provide a logical and efficient means of disseminating the information to the agricultural community which can then put it to practical use. When combined with the results of agricultural research on sustainable agriculture, this information will be a powerful tool to encourage modification of injurious and inefficient farming practices.

Hatcheries

Question: In the Fish and Wildlife Service FY 1991 Budget Justification under Fish Production it is stated that "Recreational and commercial fisheries provide major economic and social values to the American people. According to the U.S. Fish and Wildlife Service's 1985 National

Survey of Fishing, Hunting, and Wildlife-Associated Recreation, 46.4 million Americans 16 years old and older fished. These recreational anglers spent 976.6 million days on the water and $28.1 billion pursuing their sport. By 1991, the number of recreational fishermen is expected to exceed 60 million. Commercial fishing is also economically valuable."

Given these impressive figures, is the Fish and Wildlife Service willing to contribute to expanding our nation's recreational and commercial fishing facilities?

Answer: The FY 1991 President's budget includes additional funding for hatcheries that are operating at less than full production to increase the production of depleted, nationally significant fishery resources. This increased funding will be used at 21 existing national fish hatcheries involved in the production of Pacific salmon and steelhead trout, Atlantic and Gulf coast striped bass, Great Lakes lake trout, recreational warm/cool water species, and large river system species such as paddlefish and sturgeon. The Service will continue to provide technical assistance, coordination and leadership in fisheries where there is a Federal need.

Question: As you may know, I am interested in securing Federal funding for a sub-station hatchery to Norfork National Fish Hatchery in Norfork, Arkansas, at Bull Shoals Dam. I envision a facility which duplicates Norfork with 96 raceways and a complete hatchery. The staff at Norfork have the expertise and are close enough in proximity that they could manage the sub-station as well. This will hold down operations costs in that the staff and vehicles from Norfork would serve both the sub-station and Norfork. Please share with me your comments on this proposal.

Answer: The Service recognizes the value and importance of the trout fishery in the White River basin of northern Arkansas. Additional production would enhance recreational fishing opportunities in the White River basin, would be consistent with the goals of the National Recreational Fisheries Policy, and have a positive economic impact on the White River trout fishing industry. Federal water development projects have created extensive Federal mitigation responsibilities in the White River basin. Norfork and Greers Ferry National Fish Hatcheries currently provide over 2.9 million trout annually for mitigation associated with Federal projects in Arkansas, Missouri, Texas, and Oklahoma.

In the context of overall national fishery needs, a new hatchery in the White River Basin would not be a high federal priority. However, if Congress authorized and funded a new federal hatchery the Service would operate it as part of the National Fish Hatchery System.

A hatchery of the size you envision would have an annual production potential of about 2.0 million fish weighing 500,000 pounds. Operational efficiencies could be maximized by closely coordinating the hatchery's operation and management with Norfork National Fish Hatchery. Primary cost savings would be achieved by combining the overall management and administrative support of the two hatcheries.

Question: The Hatchery Maintenance and Rehabilitation account is approximately $1.5 million less than the FY 1990 enacted level and reflects reprogramming to fund the 1989 pay raise for Federal government employees. While I do not begrudge the employees their pay raise, I am concerned about the build up of a maintenance backlog. How do you plan to meet the current maintenance needs of hatcheries across the nation?

Answer: Approximately $6.5 million is requested in the FY 1991 President's budget for cyclical maintenance, repair and minor rehabilitation, and capitalized equipment needs throughout the National Fish Hatchery System. The requested funding will meet the highest priority needs of the Hatchery System in 1991; however, it will not significantly reduce the maintenance backlog, which totaled approximately $74 million in FY 1989.

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

America the Beautiful

Question: To carry out President Bush's program for preservation of the nation's resources, the FY91 budget proposes a new initiative called America the Beautiful (ATB). In this initiative, the Administration has requested funding for a variety of programs in all four Federal land agencies. For all the agencies, the America the Beautiful program provides a total of $630 million. Of that amount, the Fish and Wildlife Service is requesting funds totaling $140,472,000 in fiscal year 1991, an increase of $793,000 above the base level. Included in the total is an additional $12 million for wetlands and a decrease of $11 million for land acquisition. Some critics of the Administration are saying that this initiative is more smoke and mirrors than substance. Can you elaborate on the genesis of the America the Beautiful initiative?

Answer: America the Beautiful was developed to carry out President Bush's program to strengthen and preserve the Nation's resources. Specifically the initiative would promote reforestation, enhance recreational opportunities and benefit nationally significant natural and cultural resources.

Question: The justification seems to indicate that part of the America the Beautiful program is contingent upon enactment of separate legislation. At one point, the Administration was considering a separate authorization which included fees to raise these additional funds. Since that idea "quacked" in Director Darman's ears, it is my understanding that a simple budget amendment requesting additional funds above the budget before us today is working its way through the process. Is that accurate?

Answer: A Budget amendment for the National tree planting initiative, part of America the Beautiful, is needed.

Question: What is the status of the budget amendment?

Answer: The FY 1991 budget amendment was submitted to Congress March 29, 1990.

Endangered Species

Question: The FY 90 justification indicates that the Fish and Wildlife Service is anticipating listing an additional 55 species in fiscal year 1989. The FY 91 justification indicates that only 40 species were proposed for listing (pg. 48). Why the change in the estimate? Were 15 species reclassified or delisted?

Answer: Although the Service estimated an additional 55 species to be proposed for listing in FY 89, only 40 species were actually proposed for listing actions, as detailed below. In FY 89, $3.5 million was budgeted for listing activities. Significant concentrations of personnel time and effort were focused in FY 89 and FY 90 on resource intensive listing actions (e.g. Northern spotted owl, Desert tortoise), thereby reducing resources for other species. A breakdown of the 40 proposed actions follows:

Proposed endangered status	21
Proposed threatened status	13
Proposed reclassification from threatened to endangered	2*
Proposed reclassification from endangered to threatened	1**
Proposed delisting	2***
Proposed experimental population	1****

* Chimpanzee
Chimpanzee, pygmy

** Aleutian Canada goose

*** Purple spined hedgehog cactus
Rydberg milk-vetch

**** Guam rail

Question: In previous budget presentations, workload data for the Endangered Species program included the number of species proposed for listing, delisting, or reclassification. The fiscal year 1991 budget only includes workload data for the number of species proposed to be listed. Are you not anticipating any delisting or reclassifying of species in FY 91?

Answer: The Service is anticipating the possible reclassification (e.g. bald eagle) or delisting (e.g. dusky seaside sparrow) of several species during FY 91; however, the Service's major focus and workload is in addressing the magnitude of species awaiting evaluation for inclusion on the Federal list. Therefore, given the current level of resources, status surveys of candidate species and development and processing of listing packages will constitute the focus of the Service's listing effort. The Service will continue to evaluate species for which recovery objectives are achieved and will actively seek opportunities for delisting species where appropriate. During FY 1989 the Rydberg milk-vetch and Purple spined hedgehog cactus were delisted and the proposal for the Mathis spiderling was withdrawn. Through FY 1989, a total of 27 species have been reclassified to threatened and 17 species have been delisted. Of the latter, only 6 were delisted as a result of recovery, while 11 species were delisted for extinction or taxonomic changes (i.e. no longer a "species" under the Act). The Service expects to reclassify or delist 4-10 species in most years, many of which will be not as a result of full or partial recovery.

Consultation

Question: The FY 90 justification indicates that the Service is going to modify its method of accountability to more accurately reflect consultation workloads resulting from amendments to the Endangered Species Act. The FY 91 justification indicates that there is currently not an adequate system to measure the workload related to informal consultations (pg. 49). Historical data indicates that there were about 1,500 informal consultations in FY 79, and over 13,000 in FY 87. Did the Endangered Species Act amendments change the way you do business to the point that you can't calculate your workload?

Answer: Inconsistencies in defining and counting informal consultations among the Service's operational Regions has precluded accurate Nationwide accounting of the total informal consultation workload. The current effort to develop standard definitions of workload factors for various types of consultation activities will enable the Service to provide a more accurate accounting of its consultation workload in the future.

Question: If you can't determine the workload, how can you perform the work?

Answer: Regional budget allocations currently are made on the basis of the relative number of listed species in each Region. The number of listed species has been used as an indicator of the Regional consultation workload. Once the consultation workload factors have been developed, they will provide a more direct indication of consultation workload that can be used in resource allocation.

Recovery

Question: The budget indicates you anticipate the number of Recovery Plans under development or revision to increase from 33 in FY 89 to 60 in FY 90. Why the increase?

Answer: The increase is a reflection of 1) the number of recovery plans requiring public notice and review in accordance with the 1988 amendments to the Endangered Species Act, 2) the streamlining of the plan preparation process through increased coordination of efforts with other Federal agencies prior to approval, and 3) addressing the "ecosystem" approach to recovery for multi-species plans. The major portion of the increase between those two years is attributed to the conversion time and temporary holding of plans while they went through the public notice and review process and the aditional preparation of new plans.

Question: The budget anticipates that the number of species with recovery plans under development will decrease from 71 in FY 89 to 50 in FY 90. This decrease is attributed to the Service catching up with the workload. At your current pace, when do you anticipate catching up completely?

Answer: The Service will seek every opportunity for efficiency in the recovery planning process including multi-species recovery plans or "ecosystems" approach to recovery, as well as cost-sharing with States and other Federal agencies in implementation of recovery plans. The Service has a backlog of plans that have been in draft stage for more than a year, most to allow for public comment as required by the 1988 amendments. There will always be a number of plans in this draft stage for species that have been added to the list in the previous year or two. As the total number of plans increases, the number in need of revision will also increase as many go into their second, third, and later revisions. The number that will always be in some form of first draft or draft revision should be in the range of 40-60 per year. Based upon current resources and effort, our current pace should permit the approval of the 71 plans now under revision or first draft by the end of FY 1991.

Bruneau Hot Springs Snail

Question: The draft management plan for the Bruneau Hot Springs Snail was revised in March of 1988. The plan called for a three year effort and surrounded several actions necessary to protect the snail. The Service budgeted $357,000 for its recovery plans in FY89 and $390,000 in FY90. In fiscal year 1989 the Service completed Phase 1 of the program and a report on hydrologic and chemical data from selected thermal waters in the Indian Bath Tub Area was completed (pg. 54). Is the recovery plan still on schedule?

Answer: The Bruneau Hot Springs Snail has not been listed as an endangered or threatened species, therefore a recovery plan for the species is not required at this time. The draft species management plan prepared in 1988 described a number of studies and actions that could be implemented to protect the species before a listing determination is made. Included in the list of studies is a cooperative effort in which the U.S. Geological Survey is conducting hydrology studies. Test wells measuring the aquifer's head pressure have been drilled in three locations to determine the influence that irrigation may have on the spring's flow and which wells have the most influence over the spring. In cooperation with the Idaho State Water Resources Department, studies are underway to reconstruct the history of agricultural well development in the area and to map geographic faults. All studies are on schedule.

Question: How much is necessary in FY91 to complete this management plan?

Answer: The President's Budget for fiscal year 1991 maintains the FY90 level of $580,000 which includes the Congressional increase of $400,000. This funding level is sufficient to complete the activities included in the draft management plan scheduled for full implementation by July, 1992.

Peregrine Falcon

Question: For the past few fiscal years, the Fish and Wildlife Service has requested approximately $130,000 annually to coordinate the release of the peregrine falcon. Congress traditionally adds $300,000 to that amount and earmarks it for the Peregrine Fund Inc., a Boise, Idaho-based non profit organization. The Peregrine Fund Inc., uses these funds to breed, release and re-establish lost populations of peregrines. To date there have been over 2,400 peregrine successfully released with a target date for completion of the program of 1995. How would you rate the success of this program?

Answer: The program has exceeded expectations. The Fish and Wildlife Service (Service) has been an active partner in the reintroduction of peregrines throughout most of its former range. The need for release of peregrines is decreasing. In many regions the peregrine continues to exist without supplementation of the population. The Peregrine Fund reports that their activities should be completed in the eastern United States within one to three years. The Service is considering a status review for the species in order to evaluate the need for change in status from endangered to threatened or complete delisting in some areas.

Question: What does the FWS do with the $130,000 included in your base budget?

Answer: The Service provided $349,000 to Region 1 in FY 1989. Of that total, $339,000 was provided to the Peregrine Fund for the purposes you mentioned. Region 1 retained $10,000 of the appropriation and Regions 2 through 7 (except Region 4) expended the remaining Recovery subactivity base dollars for coordination of peregrine falcon work with the US Forest Service, the National Park Service and with States.

Piping Plover

Question: Where is the piping plover in the process?

Answer: Atlantic piping plover: The recovery plan for this population was completed in March 1988; management activities, such as control of human access during the breeding season as well as predator control, have increased on Atlantic Coast refuges, resulting in improved nesting success in 1989. In terms of the proposed critical habitat designation efforts, Regional staff are delineating boundaries for plover nesting areas and are working on the economic analysis required for such a designation. Publication in the Federal Register is scheduled for late September 1990, when the public will have an opportunity to review and comment on the effects of this proposed critical habitat designation.

Great Lakes and Northern Great Plains populations: The recovery plan for these populations was completed in May 1988. No critical habitat designation is proposed for this population.

Question: Are consultations complete?

Answer: Consultations for the Atlantic piping plover are an ongoing activity. The latest one for this population concerned a proposed docking facility at Cedar Island in Virginia. A finding of jeopardy was made, and the Corps of Engineers is currently drafting a permit containing the conditions recommended by the Service to preclude jeopardy.

Consultations for the Great Lakes and Northern Great Plains populations are ongoing on proposals affecting water flows along the major rivers of the Midwest. The latest consultation is in final stages, with a finding of jeopardy for current operations of Corps of Engineers facilities along the Missouri River in seven states.

Swan Falls

Question: Congress directed development and implementation of fish and wildlife studies on the Snake River to address effects of the Swan Falls Agreement between the State of Idaho and the Idaho Power Company (pg. 246). An additional $525,000 was provided in FY 90 to conduct the second of a three year effort which is being cost shared with Idaho Power. These funds are used to initiate instream flow studies, wildlife habitat studies, river profiling to determine the effects to wildlife, anadromous fish, resident fish and riparian vegetation of reducing water flows at the Swan Falls Dam. The studies are required by law to be complete by 1992. The FWS budget for FY 91 proposes to discontinue these studies while project results are being assessed. If this is a three year effort and two years of funding has been provided, doesn't it make more sense to assess results when the project is complete?

Answer: The overall results should be assessed when the studies are fully completed. The river profiling studies, being conducted under Memorandum of Agreement with the U.S. Geological Survey, will be about 80 percent completed by the end of this fiscal year. At the end of FY 1990, field work by the Fish and Wildlife Service on the wildlife and fisheries studies will be about 50 percent completed.

Question: What is the Federal cost of the final year of the studies?

Answer: The Federal cost is anticipated to be $210,000 and 5 FTEs for the Federal share in the third year.

Lower Snake River Compensation Plan

Question: As part of the Lower Snake River Compensation Plan (LSRCP), a contract for over $16 million was awarded in 1989 for construction of the Clearwater Hatchery. This hatchery is to be the last of the 12 hatcheries to be built as part of the plan and is designed to produce over 1,300,000 spring chinook and 2,500,000 steelhead smolts. The facilities constructed for these plans were designed to produce over 9 million fall chinook; 6.7 million spring and summer chinook; and 11 million steelhead smolts. Will the facilities meet these long standing production goals?

Answer: When construction of the Clearwater Hatchery is completed, sufficient hatchery capacity will be available to meet LSRCP fish production goals. However, in some years the escapement of chinook salmon to the Snake River is inadequate to provide the eggs necessary to meet LSCRP fish production goals. This is due to variations in natural events, such as weather, predation, etc., that affect survival rates. In these instances, hatcheries are only able to operate at 60-70 percent of capacity. The steelhead escapement has thus far been adequate to meet production goals of the LSRCP.

Question: Is completion of the Clearwater Hatchery on schedule for mid 1991?

Answer: Construction of the Clearwater Hatchery originally scheduled for completion by February 1991, is expected to be completed in late summer of 1991.

Relicensing

Question: The passage of the Federal Power Act subjecting hydropower projects to licensing requirements resulted in many projects being licensed at the same time and, therefore, will be relicensed at the same time as the original licenses expire (pg. 69). The FWS expects that relicensing will peak in 1993, with the bulk of the workload starting in 1990 and continuing to 1995.

The budget indicates that there are two specific Service activities necessary to ensure that fish and wildlife values are considered in Commission licensing procedures:

1. coordination and review of site-specific project proposals; and

2. evaluation of the cumulative impacts resulting from proposed and existing projects within the same watershed or basin.

How many hydro-projects will require your review over the next five years?

Answer: Over 200 hydropower licenses will expire in the next five years. Many of these licenses include more than one power plant and dam. Several licenses have over 20 dams involved. In addition to the relicensing workload, work will continue on initial licenses for new unconstructed hydropower projects, and for constructed projects which have been operating without federal licenses (i.e., those projects for which FERC recently asserted jurisdiction).

Question: What sort of a baseline will you utilize in this effort? For example, do you anticipate using fish passage and instream flows prior to the construction of the facility to be relicensed or the current fish passage and instream flows?

Answer: After licenses expire, each project is required to obtain a new license. These are considered new projects to be evaluated in light of today's standards and conditions. However, rather than using a specific historic baseline for determining the needs for fish passage and instream flows, we are looking at the present state and federal resource objectives for each river system. These determinations will be made from known and planned fishery management programs. For practical reasons, at this time, fisheries' agencies do not plan to restore anadromous fish runs on every river system in the East which historically supported such runs. The actual objectives for each river will be based on instream flow requirements. To identify appropriate flows to meet present objectives, species composition and distribution must be ascertained as well as an assessment of available habitats. In addition, to identify appropriate flows to meet present objectives, research on flow requirements for warm-water and cool-water fish species will be needed in certain areas, such as eastern rivers where such basic data is lacking.

Idaho Power Relicensing

Question: The FWS has entered into a joint agreement with Idaho Power and the Idaho Department of Fish and Game concerning relicensing of the Company's seven major hydroelectric projects in south central Idaho. Informal consultation concerning studies will commence in FY 90. Formal consultation pursuant to FERC regulations will commence in FY 92. Have informal consultations proceeded smoothly?

Answer: Yes, the Fish and Wildlife Service, Idaho Power, and the Idaho Department of Fish and Game have achieved excellent cooperation in the early stages of planning for this relicensing effort.

Question: Is Idaho Power the only utility with a joint agreement in this area?

Answer: To the best of our knowledge the agreement with Idaho Power is the only Memorandum of Understanding that has been negotiated for an informal consultation process on FERC projects in the Pacific Northwest. There are others, however, being negotiated in Connecticut and Montana.

Question: How much funding is necessary to implement this agreement in FY 91?

Answer: We estimate that the Federal share for implementing this joint agreement would require an additional $250,000 and 5 FTEs. Funds would be used to conduct baseline impact analysis and define and negotiate mitigation alternatives. The State would incur similar costs. Idaho Power costs for relicensing are many times the costs of environmental coordination.

Question: How much is included in the budget?

Answer: The President's budget does not include and funding for this agreement.

Question: You have requested a reduction of 12 percent ($2,035,000 in FY 90: $1,785,000 in FY 91) for the relicensing effort. With all the additional work coming up in the next few years, why are you proposing a budget reduction?

Answer: An additional $250,000 provided in FY 90 enabled the Service to complete coordination on at least two major relicensing activities and become more involved in about 200 relicensing activities. In FY 91 the Service will address the highest priority relicensing activities.

Question: Is this amount adequate in FY 91 to meet the obligations you have for the existing and anticipated joint agreements? If not, what is necessary in FY 91 for this effort?

Answer: The Idaho Power agreement is the only joint agreement of this type in the country. Funding levels for this agreement are anticipated to be $250,000. The intent of the Idaho Power agreement was to begin consultations before the formal FERC relicensing period beginning in FY 92. For the majority of other projects throughout the country, formal consultation pursuant to FERC regulations has already begun due to earlier license expirations. The Service will treat this as a high priority relicensing activity.

Question: Please provide for the record, and to the Committee, a breakdown of the existing and anticipated joint agreements with the required funding levels.

Answer: Other types of joint agreements are anticipated following relicensing to accommodate mitigation agreements, such as one being developed for Kerr Dam in Montana. In addition, agreements are being developed on the Connecticut River to restore anadromous fisheries, even though these licenses are not scheduled for relicensing until the next century. Funding levels for these are expected to be approximately $75,000.

Question: What does the Service mean when it states: "These relicensing activities provide unique opportunities to maintain and restore important fishery resources on already perturbated streams." (pg.72)

Answer: A number of hydropower projects have affected aquatic resources in areas with the potential to support significant sport fisheries. Since the new licenses to be issued are new actions, the projects are considered in light of today's environmental standards and defined State and Federal resource objectives. In many cases, appropriate changes in project operations or facilities can provide significant improvements to existing fishery resources, thereby meeting present State and Federal resource objectives for a river system. In addition, pertinent biological and technical information and methodologies may be available at the time of relicensing that were not available at the time the original license was issued.

This opportunity is unique in that it allows for improvement of the resource base while continuing power generation at an existing project site.

Environmental Contaminants

Question: The Service is currently working on a contaminant monitoring project focusing on two areas. One is the development of consistent site specific monitoring plans and collection techniques for use on refuges. The other is on monitoring fish and wildlife resources on a regional and national scale.

It is my understanding that the monitoring plans are developed and ready to be tested, but no funds have been requested in FY 1991 for the testing. What type of testing is necessary for the first task?

Answer: A tool known as a decision tree has been developed which, through a series of evaluations, recommends a monitoring strategy for an individual refuge. In order to ensure that this process is satisfactory for the wide range of landscape and ecological conditions present in the refuge sytem, we propose to test the decision tree on up to 10 percent of the Service's refuges. This testing will be used to evaluate the strategy and methods that have been developed. The monitoring strategy will then be revised based on the results of the testing, before the National Refuge Monitoring Program is fully implemented.

Question: How much additional funding is necessary for testing?

Answer: An additional $1.7 million is needed for testing.

Question: What is the status of the second task?

Answer: A review of existing Federal monitoring programs and recommendations of methods for monitoring of contaminants impacts on fish and wildlife will be completed by the Idaho National Engineering Laboratory by October 1, 1990. Initial results indicate that the Service's existing National Contaminant Biomonitoring Program should be updated and that other Federal monitoring programs do not provide the information needed by the Service to manage and protect fish and wildlife resources. The Director has established a biomonitoring workgroup to develop a conceptual plan based on the Idaho National Engineering Laboratory's preliminary conclusions, the Service's 20 years of experience with our National Contaminant Biomonitoring Program, and recommendations from the Service's environmental contaminants activities in operations and research.

Question: What is the next logical step for the second task and how much additional funding is necessary?

Answer: The next step has two objectives. Acting upon the recommendations of the Service's biomonitoring workgroup, a final monitoring plan will be completed that will complement, and be coordinated with, other Federal monitoring programs. The second objective will be to field test a battery of promising methods, that have already been identified, to define their reliability under varying environmental conditions. These methodologies will employ biological procedures, in addition to chemical residue analysis, to quantify effects to natural resources. Those techniques proven to be reliable will be incorporated into the Service's revised monitoring plan. An additional $1.0 million is needed to complete the final revised monitoring plan and field testing of promising methods.

Underground Storage Tanks

Question: The Service has requested an additional $1.0 million in FY 1991 to begin addressing the EPA regulations on underground storage tanks (page 98). The Service estimates that there are nearly 1,000 underground storage tanks within its responsibility. The Service is currently conducting a survey to gather information related to the number of tanks and the cost and schedule for bringing them into compliance with regulations.

The increase is to "ensure that the Service is able to initiate work toward full implementation of the standards." Do you anticipate replacing all 1,000 tanks?

Answer: The Service is in the process of gathering information on the number of underground storage tanks under its responsibility and the cost and schedule for bringing them into compliance with the regulations. Preliminary information (there are a few duplicate records to be expunged) indicates that the Service has approximately 1,200 underground storage tanks. A plan is being developed for each tank to guide Service actions in order to ensure it is brought into compliance with Service policy and State and Federal regulations between now and 1998. The Service believes that in order to achieve compliance, virtually all of its tanks will require replacement by 1998.

Question: Will the $1.0 million complete the survey? If not, how much is necessary?

Answer: The initial survey has already been completed. The funds requested are for costs to begin implementation. The data we have gathered thus far indicates that the average cost of addressing an underground storage tank and bringing it into compliance is approximately $10,000. Assuming that this is a reasonable estimate, the additional $1.0 million in FY 1991 will allow us to bring approximately 100 tanks into full compliance. Preliminary estimates indicate the cost of addressing all of our tanks will likely exceed

$11.6 million. This includes removal of old tanks and replacement with either above ground tanks or new underground tanks that can meet the compliance standards. In most cases, it does not make fiscal sense to attempt expensive retrofitting to bring existing tanks into compliance.

Question: Are other Federal agencies proceeding in a similar fashion?

Answer: We cannot address the plans of other Federal agencies except to say that, within the Department of the Interior, the other agencies are inventorying their tanks and making plans to bring them into compliance.

Stillwater Wildlife Management Area

Question: In FY 89 and FY 90, Congress provided a total of $2.7 million to the Service to purchase water rights for the Stillwater Wildlife Management Area wetlands. The Service has indicated that as much as $50 million may be necessary to effectively manage these wetlands. To date, offers totaling nearly $2.4 million have been made to purchase or lease water on seven tracts covering 1,795 acres in the Stillwater Wildlife Management Area, with 4,516 acre feet of water rights. As required by law, all transactions are contingent upon the successful transfer of water with the approval of the State of Nevada (pg 131).

What is the status of your discussions with the State of Nevada?

Answer: On April 16, 1990, the Nevada State Engineer approved the first water right transfer to the Stillwater Wildlife Management Area. This transfer application was filed September 15, 1989 and represents approximately 194 acre feet of water. Four additional transfer requests have been submitted for consideration by the State Engineer.

Sturgeon

Question: As part of the Fisheries Restoration Coordination program, you have requested an additional $160,000 in FY91 for Missouri and Mississippi River basin/paddlefish, pallid sturgeon and other indigenous, imperiled fish. Can you provide some additional detail on the proposed breakdown of these funds?

Answer: Indigenous fishes of the Upper Missouri River from Montana downstream through South Dakota have been seriously affected by the construction of numerous Federal water development projects. The FY 1991 President's budget request includes an increase of $160,000 to begin restoration efforts for these indigenous fish species, including paddlefish, pallid sturgeon, sturgeon chub, and stickleback chub. Restoration efforts in 1991 will be directed at collection of baseline data on life history, including natural spawning and nursery areas; tagging studies to determine population size and movement; genetics; identification of restoration sites for stocking; and artificial propagation. The proposed breakdown of the increased funding is $90,000 for salaries, $10,000 for travel, $40,000 for equipment, and $20,000 for supplies.

When the President's budget was being developed, the work for this activity was to be carried out by the Valley City Fishery Assistance Office, collocated at the Valley City National Fish Hatchery, North Dakota. The Service now intends to relocate the Valley City Fishery Assistance Office to Bismarck, North Dakota. This relocation will increase the Service's effectiveness on Missouri River issues and improve logistics and other problems relating to ongoing fishery assistance activities. The Bismarck office will be collocated with the Service's Enhancement office to more effectively deal with management, habitat, and endangered species issues.

Question: It is my understanding that a sturgeon was artificially spawned in the Snake River in 1988. Juveniles from that spawning were tagged and released in 1989 to test the feasibility of enhancing the population. Who is doing this research? The FWS? The College of Southern Idaho?

Answer: The Service is not presently involved with sturgeon research in the Snake River. Presently, sturgeon research is being done in southern Idaho cooperatively by the College of Southern Idaho, commercial trout growers, and the Idaho Department of Fish and Game. The Idaho Department of Fish and Game does the field work. The College of Southern Idaho holds fish, is working on spawning them, and is the coordinator between all groups. The Service is involved with the National Marine Fisheries Service, Oregon Department of Fish and Wildlife, and Washington Department of Fisheries in a sturgeon research program in the Columbia River down stream from McNary Dam. The study is funded by Bonneville Power Administration and focuses on population dynamics and life history information.

Question: What is the status of the juveniles released in 1989?

Answer: Last year the project succeeded in getting one pair of sturgeon to spawn obtaining about 16,000 eggs which produced 5,000 to 6,000 young fish. Most of these fish were released last year. They still have approximately 500 to release this year.

Question: Do you provide any technical assistance to the College of Southern Idaho hatchery for sturgeon research? Funding?

Answer: The Service does not provide any technical assistance or funding to the College of Southern Idaho hatchery for sturgeon research.

Appropriate Technology for Rural Areas (ATTRA)

Question: Earlier this year, the Fish and Wildlife Service proposed to reprogram $1.0 million in FY 1990 to fund the Appropriate Technology Transfer for Rural Areas (ATTRA). The source of funds for this program was from cyclical maintenance projects at national wildlife refuges, hatcheries, and research facilities. The ATTRA program is a transfer service responding to questions from the agriculture community concerning resource conservation measures. With a backlog of maintenance needs totaling $234 million, many have questioned the necessity of moving money into a new program which was not contemplated in the FY 1990 budget submission. How can this program assist the Service in its mission?

Answer: Appropriate Technology Transfer for Rural Areas (ATTRA) is a unique informational system which provides specific answers to the rural and agricultural community on matters relating to low input and sustainable agriculture. One of the primary missions of the Fish and Wildlife Service is to preserve, protect and enhance fish and wildlife habitats. The principles and practices of low input, sustainable agriculture directly benefit fish and wildlife habitat in many ways, the most significant being the reduction of agricultural chemical run-off and soil erosion. Other benefits accrue to fish and wildlife resources through enhancement of both upland and wetland habitats. Since the information provided benefits not only the farmer but also the fish and wildlife resource, the best of both worlds occur. A large majority of fish and wildlife habitat occurs on private lands, and a service like ATTRA has a major impact on how that land is managed.

Question: If the $1.0 million is not provided for ATTRA funding or for additional maintenance, what is next on the Service's priority list?

Answer: If the reprogramming is not approved by the Congress, the funds would be used to complete cyclical maintenance projects indicated on the following list.

REPROGRAMMING FOR ATTRA

Fisheries
Hatchery Maintenance

REGION	STATION	DESCRIPTION/IMPACT	FUNDING $000
1	Entiat NFH (WA)	Delay development of spring water project to better control flow and filter water for hatchery use.	42
		Subtotal	42
2	Dexter NFH (NM)	Delay reroofing building.	11
		Subtotal	11
3	Iron River NFH (WI)	Delay completion of bulk feed handling system.	19
		Subtotal	19
4	Walhalla NFH (SC)	Would delay replacement of truckster.	8
	Wolf Creek NFH (KY)	Repair raceway walls. Would delay repair on walls.	10
	Orangeburg NFH (SC)	Replace worn gooseneck trailer/ fish distribution tank unit.	10
		Subtotal	28
5	Nashua NFH (NH)	Delay digging new well.	19
		Subtotal	19
6	Jones Hole NFH (UT)	Road Repairs. Reduce extent of repair. Defer unfinished portion.	30
		Subtotal	30
7	Fisheries	Cyclical maintenance.	1
		Subtotal	1
		Fisheries, Total	150

REPROGRAMMING FOR ATTRA

Research and Development
Research Center Maintenance

REGION	STATION	DESCRIPTION/IMPACT	FUNDING $000
8	Nat'l Fisheries Contaminant Research Center - Columbia (MO)	Residing and insulation of rusting metal bldgs.	20
	Nat'l Fisheries Research Center - Great Lakes	Overhaul Worthington chiller. Chiller is used to chill water going to fish holding tanks.	10
	Nat'l Fisheries Research LaCrosse (WI)	Delay replacing plastic membranes in 4 research ponds.	20
	National Fisheries Research Center - Leetown (WV)	Install electrical phase guards to monitor line voltage on electrical systems. Avoid possible damage to equipment during power phase/ failure.	50
		Subtotal	100
		Research and Development, Total	100

Refuges and Wildlife
Refuges and Wildlife Maintenance

REGION	STATION	DESCRIPTION/IMPACT	FUNDING $000
1	Sacramento (CA)	Replace water control structure and screw gate used in maintenance of marsh habitat for waterfowl.	69.5
	Sutter (CA)	Repair/replace portion of water mgmt system. used in mgmt. of marsh habitat for waterfowl.	31.5
		Subtotal	101.0
2	Wichita Mtns (OK)	Delay repair of boundary fence.	100
		Subtotal	100
3	Agassiz NWR (MN) Crab Orchard NWR (IL) Minnesota Valley (MN)	Delay portion of bridge inspections until 1991. Cancel regional maint. workshop and heavy equipment training scheduled for FY 1990.	108
		Subtotal	108
4	Yazoo NWR (MS)	Replace pump motor. Limit amount of moist soil development.	18
	Santee NWR (SC)	Replace pump and power unit. Limit amount of water control structure rehab.	25

REGION	STATION	DESCRIPTION/IMPACT	FUNDING $000
4	Cross Creeks NWR (TN)	Rehab water control structure. Limit amount of rehab. to these structures.	21
	Catahoula NWR (LA)	Spillway repair postponed.	20
	Wheeler NWR (AL)	Replace roof on interpretive center.	44
	Wheeler NWR (AL)	Pest plant control. Alligator weed out competes desirable food for wintering waterfowl.	8
		Subtotal	136
5	Chincoteague NWR (VA)	Defer repairs/rehab. of beach road.	90
		Subtotal	90
6	Nat'l Bison (MT)	Visitor Center. Can't accommodate current demand.	13.8
	Ft. Niobrara NWR (NE)	Outlet structure rehabilitation.	20
	Long Lake NWR (ND)	Delay rehab of 6 dikes. Used for botulism control.	30.45
	Arapaho NWR (CO)	Massey Ferguson Diesel Farm Tractor. Unable to do force account farming for winter duck/goose use.	28.75
	Upper Souris NWR (ND)	Delay rehabilitation and replanting deteriorating nesting cover.	20.0
		Subtotal	113.0
7	Arctic NWR (AK)	Will not replace inflatable boats field equipment and computer.	28
	AK Maritime NWR (AK)	Will not replace weatherports.	14
	Kenai NWR (AK)	Will not replace stream gauges	10
	Kodiak NWR (AK)	Will not rehabilitate desk and storage area (Visitor Contact Station)	3
	Nowitna NWR (AK)	Replace only half of the older computers; will not replace outboards	13
	Selawik NWR (AK)	Will not conduct Take Pride activity (litter control)	10

REGION	STATION	DESCRIPTION/IMPACT	FUNDING $000
7			
	Tetlin NWR (AK)	Will reduce miscellaneous Maint. Mgmt. System projects by 9,000 (was 27,000 reduced to 18,000)	9
	Law Enforcement	Will not replace one vehicle	15
		Subtotal	102
		Refuges and Wildlife, Total	750

Refuge Revenue Sharing

Question: Please provide for the record the total liability under the Refuge Revenue Sharing Act.

Answer: The estimated total amount due the counties in FY 1991 under the Refuge Revenue Sharing Act is projected at $16,935,000. The actual calculated amount due the counties will not be known until March or April of 1991.

QUESTIONS SUBMITTED BY SENATOR TED STEVENS

Exxon Valdez Oil Spill

Question: The Trustees spent over $35 million in FY 89 to assess the damages from the Exxon Valdez oil spill. Exxon advanced $15 million of the cost, but the Trustees had to advance the rest. They've now asked Exxon to reimburse the $20 million they spent as required under CERCLA.

My staff was advised this morning that Exxon's answer is no until the Trustees provide an accounting of how the first $15 million was spent. According to Exxon, they have received no accounting as they requested. Has the accounting been submitted?

Answer: The accounting that Exxon requested was provided to Exxon on March 22, 1990. A copy of the materials provided to Exxon is attached.

Question: Additional damage assessment studies are planned for this summer and next. Has any money been budgeted for these efforts, and if so, will it affect other ongoing programs?

Answer: The Department has identified expected costs in 1990 of $11.4 million including damage assessment studies and other activities, such as response (clean-up). These costs are summarized by bureau and by type of activity as follows:

($ thousands)

Bureau	Response	Damage Assessment	Project Support	Other	TOTAL
BLM	0	0	12	0	12
FWS	300	7,169	305	0	7,774
NPS	1,129	176	554	0	1,859
BIA	0	0	0	775	775
Department Offices	2	89	12	833	936
Total, DOI	1,431	7,434	883	1,608	11,356

Funding needs are projected to continue the clean-up activities in Prince William Sound by both the Fish and Wildlife Service and the National Park Service (NPS), primarily to monitor and support the direct activities of Exxon and its contractors. Damage assessment activities will continue, with

Interior (through the Service) responsible for eleven biological studies plus a share of economic, archaeological, and restoration studies. NPS also expects to incur expenses related to damage assessment, primarily for study activities occurring on NPS lands. Both the Service and NPS continue to incur costs related to significant management and administration needs related to the oil spill, including financial management, civil/criminal investigation support, and damage assessment plan preparation. Both bureaus have established separate organizational units in Alaska to coordinate and manage their oil spill activities. Departmental offices (Solicitor and Environmental Affairs) will continue to incur higher than budgeted costs to support bureau activities and coordinate with other agencies, including the Department of Justice, the Department of Transportation, and the State of Alaska.
A number of sources of funding have been identified to cover the Department's expected 1990 Alaska oil spill costs. These are summarized as follows:

Total Identified Needs: 11,356

Available Resources:

BIA Base Funding	775	BIA plans to fund its work within existing 1990 Appropriations.
Oil Spill Emergency Fund	1,500	The current balance of the fund is $1,759 million; we propose reserving 259 thousand at this time to cover contingencies in 1990. Under the provisions of the 1989 supplemental, these funds expire in 1990.
311(k) Reimbursements	555	This amount represents the total in claims submitted to the Coast Guard by Interior bureaus. In addition, $601 thousand in claims have not yet been submitted to the Coast Guard.
Service Funds from 1989	1,624	Service did not use all of the funds provided for oil spill work in 1989 since certain studies were begun late and others cost less than anticipated. This amount remains available within the Service for oil spill costs.
Subtotal, Available Resources	4,454	
Current Needs	6,901	This amount represents the current balance of needs, net of available resources. Included in this figure is $833 thousand for the Department of Justice to provide funding to support the oil spill litigation. We anticipate that reprogrammings or use of the Secretary's emergency transfer authority under Section 102 of the Interior appropriations act will be necessary to meet these needs. Sources of reprogrammings or emergency transfers are being identified by the Department. We do not believe that support for the Justice litigation needs is possible using the Section 102 authority.

Most of the available resources, as well as any reprogrammed and transferred funds, will expire on September 30, 1990. The total identified needs of $11.4 million for 1990 include the full cost of completing the damage assessment studies that begin in March 1990. These studies will continue through February 1991. The Department is in the process of preparing reallocations for Fiscal Year 1991. Those reallocations will cover the Fiscal Year 1991 portion of the studies that began in March 1990 and will be completed in February 1991.

Mr. Frank J. Iarossi
President
Exxon Shipping Company
800 Bell Street
Houston, Texas 77251-1512

Dear Mr. Iarossi:

In our letter to you of January 11, 1990, the State of Alaska and the United States, acting by and through the Department of Agriculture, the Department of the Interior and the National Oceanic and Atmospheric Administration of the Department of Commerce (hereinafter referred to as Trustees), made application upon Exxon for the amount of $20,420,900 to fund the balance of the damage assessment process to March 1, 1990.

We understand that you have requested documentation of obligation of the balance of the $15 million provided by Exxon for the damage assessment process. Such documentation is enclosed for your review. If you have additional questions regarding the enclosures, please direct them to Thomas A. Campbell, General Counsel of the National Oceanic and Atmospheric Administration, at 202/377-4080.

We hope that this information is sufficient to allow you to expeditiously process our request.

Don Collinsworth 3.21.90
Don W. Collinsworth Date
Commissioner
Department of Fish and Game
State of Alaska

Clayton Yeutter 3/21/90
Clayton K. Yeutter Date
Secretary
United States Department
of Agriculture

3/21/90
Manuel Lujan, Jr. Date
Secretary
United States Department
of the Interior

John A Knauss 3/21/90
John A. Knauss Date
Under Secretary for Oceans
and Atmosphere/Administrator
National Oceanic and
Atmospheric Administration
United States Department of
Commerce

Enclosure

assistance agreement, attach completed Standard Form 272-A.)

RECIPIENT ORGANIZATION	U. S. Coast Guard	
Name : Alaska, Office of the Governor	4. Federal grant or other identification number 99-2-0100017	5. Recipient's account number or identifying number
Number and Street : P.O. Box A	6. Letter of credit number N/A	7. Last payment voucher number N/A
	Give total number for this period	
City, State and ZIP Code: Juneau, Alaska 99811-0101	8. Payment Vouchers credited to your account	9. Treasury checks received (whether or not deposited)
3. FEDERAL EMPLOYER IDENTIFICATION NO. ▶ 92-6001185	10. PERIOD COVERED BY THIS REPORT	
	FROM (month, day, year) 12 01 89	TO (month, day, year) 12 31 89

11. STATUS OF FEDERAL CASH (See specific instructions on the back)	a. Cash on hand beginning of reporting period	$ 9,300.00
	b. Letter of credit withdrawals	-0-
	c. Treasury check payments	3,538,900.00
	d. Total receipts (Sum of lines b and c)	3,538,900.00
	e. Total cash available. (Sum of lines a and d)	3,548,200.00
	f. Gross disbursements	-0-
	g. Federal share of program income	-0-
	h. Net disbursements (Line f minus line g)	-0-
	i. Adjustments of prior periods	-0-
	j. Cash on hand end of period	$ 3,548,200.00
12. THE AMOUNT SHOWN ON LINE 11J, ABOVE, REPRESENTS CASH REQUIREMENTS FOR THE ENSUING Days	13. OTHER INFORMATION	
	a. Interest income	$ -0-
	b. Advances to subgrantees or subcontractors	$ -0-

14. REMARKS (Attach additional sheets of plain paper, if more space is required)

15. CERTIFICATION

I certify to the best of my knowledge and belief that this report is true in all respects and that all disbursements have been made for the purpose and conditions of the grant or agreement	AUTHORIZED CERTIFYING OFFICIAL	SIGNATURE Sara Jane Peacock	DATE REPORT SUBMITTED 01/04/90
		TYPED OR PRINTED NAME AND TITLE Sara Jane Peacock Finance Officer	TELEPHONE (Area Code, Number, Extension) (907) 465-3544

THIS SPACE FOR AGENCY USE

272-103

STANDARD FORM 272 (7-76)
Prescribed by Office of Management and Budget
Cir. No. A-110

UN DATE 11/14/89 SF-133 REPORT ON BUDGET EXECUTION FOR PERIOD ENDING 09/30/89 PAGE 1 OF 1
GENCY: DEPARTMENT OF AGRICULTURE APPROPRIATION CODE: 12-89X5168(11) ACCT STAT: 99
UREAU: FOREST SERVICE TITLE: ALASKA OIL SPILL

DESCRIPTION BUDGETARY RESOURCES		TOTAL
OGET AUTHORITY:		
APPROPRIATIONS REALIZED		$
APPROPRIATIONS ANTICIPATED (INDEFINITE)		
OTHER NEW AUTHORITY($	)	
NET TRANSFERS (+ OR -)		2,090,800
OBLIGATED BALANCE:		
BROUGHT FORWARD OCTOBER 1		
NET TRANSFERS (+ OR -)		
IMBURSEMENTS AND OTHER INCOME:		
EARNED($	)	
CHANGE IN UNFILLED CUSTOMERS ORDERS (+ OR -)		
ANTICIPATED FOR REST OF YEAR		
COVERIES OF PRIOR YEAR OBLIGATIONS:		
ACTUAL($	)	
ANTICIPATED FOR REST OF YEAR		
ITION NOT AVAILABLE PURSUANT TO P.L.	(-)	
.TORATIONS(+)AND WRITEOFFS(-) ($	)	
AL BUDGETARY RESOURCES		2,090,800
TATUS OF BUDGETARY RESOURCES		
IGATIONS INCURRED($	1,883,762)	1,942,388
BLIGATED BALANCES AVAILABLE:		
PPORTIONED CATEGORY A		148,412
PPORTIONED CATEGORY B		
HER BALANCES AVAILABLE		
BLIGATED BALANCES NOT AVAILABLE:		
PPORTIONED FOR SUBSEQUENT PERIODS+		
THHELD PENDING RESCISSION+		
FERRED+		
NAPPORTIONED BALANCE OF REVOLVING FUND+		
HER BALANCES NOT AVAILABLE		
AL BUDGETARY RESOURCES		2,090,800
LATION OF OBLIGATIONS TO OUTLAYS ND ACCRUED EXPENDITURES		
IGATIONS INCURRED, NET (8 - 3A - 3B - 4A)		1,942,388
UNPAID OBLIGATIONS:		
LIGATED BALANCE AS OF OCTOBER 1		
LIGATED BALANCE TRANSFERRED, NET (+ OR -)		
LIGATED BALANCE END OF PERIOD		1,459,736
AYS (12 + 13A + 13B - 13C)($	266,548)	482,652
GE IN ACCOUNTS PAYABLE, NET:		
COUNTS PAYABLE, NET, AS OF OCTOBER 1		
COUNTS PAYABLE TRANSFERRED, NET (+ OR -)		
COUNTS PAYABLE, NET, END OF PERIOD		1,415,572
ED EXPENDITURES(14-15A-15B+15C)($	1,813,698)	1,898,224

William C. [illegible], Jr. NOV 15 1989
AUTHORIZED OFFICER DATE

FORM S.F. 132

Description	Total		
BUDGETARY RESOURCES			
1. Budget authority:			
A. Appropriation realized			
B. Appropriations anticipated (indefinite)			
C. Other new authority ( ))			
D. Net transfers (+ or -)			
2. Unobligated balances:	751,200		
A. Brought forward October 1	160,412		
B. Net transfers (+ or -)			
3. Reimbursements and other income:			
A. Earned ($)			
B. Change in unfilled customers' orders (+ or -)			
C. Anticipated for rest of year			
4. Recoveries of prior year obligations:			
A. Actual ($))			
B. Anticipated for rest of year			
5. Portion not available pursuant to P.L.__________(-)			
6. Restorations (+) and writeoffs (-) ($))			
7. Total Budgetary Resources	911,612 160,412		
STATUS OF BUDGETARY RESOURCES			
8. Obligations incurred ($ 871,907)	791,077		
9. Unobligated balances available:			
A. Apportioned, category A	102,536 (791,077)		
B. Apportioned, category B			
C. Other balances available			
10. Unobligated balances not available:			
A. Apportioned for subsequent periods			
B. Withheld pending rescissions			
C. Deferrals			
D. Unapportioned balance of revolving fund			
E. Other balances not available	-0- 160,412		
11. Total Budgetary Resources	160,412		
RELATION OF OBLIGATIONS TO OUTLAYS AND ACCRUED EXPENDITURES			
12. Obligations incurred, net (8-3A-3B-4A)	791,077		
13. Net unpaid obligations:			
A. Obligated balance, as of October 1	1,459,726		
B. Obligated balance transferred, net (+ or -)			
C. Obligated balance, end of period	1,810,371		
14. Outlays (12+13A+13B-13C) ($ 77,309)	440,441		
15. Change in accounts payable, net:			
A. Accounts payable, net, as of October 1	1,419,578		
B. Accounts payable transferred, net (+ or -)			
C. Accounts payable, net, end of period	1,702,032		
16. Accrued expenditures (14-15A-15B+15C) (870,042)	807,528		

*Form S.F. 133

(Authorized officer) (Date)

BUDGETARY RESOURCES			
1. Budget authority:			
A. Appropriations realized..............................	0		0
B. Appropriations anticipated (indefinite)..........			
C. Other new authority( ).........			
D. Net transfers (+ or -)..............................	2,094,800.00		2,094,800.00
2. Unobligated balance:			
A. Brought forward October 1........................	0		0
B. Net transfers (+ or -)..............................			
3. Reimbursements and other income:			
A. Earned............($			
B. Change in unfilled customer's orders (+ or -)...			
C. Anticipated for rest of year.........................			
4. Recoveries of prior year obligations:			
A. Actual..............($ 0	0		0
B. Anticipated for rest of year.........................			
5. Portion not available pursuant to (-)			
6. Restorations (+) and writeoffs (-) ($)			
7. Total Budgetary Resources................................	2,094,800.00		2,094,800.00
STATUS OF BUDGETARY RESOURCES			
8. Obligations incurred.........($ 1,992,000.00	1,992,000.00		1,992,000.00
9. Unobligated balances available:			
A. Apportioned, category A............................			
B. Apportioned, category B............................			
C. Other balances available............................	102,800.00		102,800.00
10. Unobligated balances not available:			
A. Apportioned for subsequent periods*..............			
B. Withheld pending recission*........................			
C. Deferred*...			
D. Unapportioned balance of revolving fund*........			
E. Other balances not available........................			
11. Total Budgetary Resources	2,094,800.00		2,094,800.00
RELATION OF OBLIGATIONS TO OUTLAYS AND ACCRUED EXPENDITURES			
12. Obligations incurred, net (8-3A-3B-4A)..............	1,992,000.00		1,992,000.00
13. Net unpaid obligations:			
A. Obligated balance, as of October 1...............	0		0
B. Obligated balance transferred, net (+ or -).....			
C. Obligated balance, end of period..................	223,295.00		223,295.00
14. Outlays (12+13A+13B-13C)....($ 1,768,705.00	1,768,705.00		1,768,705.00
15. Change in accounts payable, net			
A. Accounts payable, net as of October 1............	0		0
B. Accounts payable transferred, net (+ or -)......			
C. Accounts payable, net, end of period............	200,000.00		200,000.00
16. Accrued expenditures (14-15A-15B+15C) ($ 1,968,705.00	1,968,705.00		1,968,705.00

*From S.F. 132

Sheila K. Smith
(Authorized Officer)

10/17/89
(Date)

				Total
BUDGETARY RESOURCES				
1. Budget authority:				
A. Appropriations realized..........................		0		
B. Appropriations anticipated (indefinite).........				
C. Other new authority( ).........				
D. Net transfers (+ or -)..........................		664,200		664,2
2. Unobligated balance:				
A. Brought forward October 1.......................		102,800		102,8
B. Net transfers (+ or -)..........................				
3. Reimbursements and other income:				
A. Earned............($				
B. Change in unfilled customer's orders (+ or -)...				
C. Anticipated for rest of year....................				
4. Recoveries of prior year obligations:				
A. Actual.............($	0	0		
B. Anticipated for rest of year....................				
5. Portion not available pursuant to	(-)			
6. Restorations (+) and writeoffs (-) ($				
7. Total Budgetary Resources..........................		767,000		767,00
STATUS OF BUDGETARY RESOURCES				
8. Obligations incurred........($	0	0		
9. Unobligated balances available:				
A. Apportioned, category A.........................				
B. Apportioned, category B.........................				
C. Other balances available........................		767,000	✓	767,00
10. Unobligated balances not available:				
A. Apportioned for subsequent periods*.............				
B. Withheld pending recission*.....................				
C. Deferred*.......................................				
D. Unapportioned balance of revolving fund*........				
E. Other balances not available....................				
11. Total Budgetary Resources		767,000		767,00
RELATION OF OBLIGATIONS TO OUTLAYS AND ACCRUED EXPENDITURES				
12. Obligations incurred, net (8-3A-3B-4A)............		0		0
13. Net unpaid obligations:				
A. Obligated balance, as of October 1..............		223,295		223,295
B. Obligated balance transferred, net (+ or -).....				
C. Obligated balance, end of period................		223,295		223,295
14. Outlays (12+13A+13B-13C)....($	0	0	←	0
15. Change in accounts payable, net				
A. Accounts payable, net as of October 1...........		199,605		199,605
B. Accounts payable transferred, net (+ or -)......				
C. Accounts payable, net, end of period............		199,605		199,605
16. Accrued expenditures (14-15A-15B+15C) ($	0	0		0

*From S.F. 132

(Authorized officer)

01/17/90
(Date)

[illegible]	14/69X5168		
BUDGETARY RESOURCES			
1. Budget authority:			
A. Appropriations realized..........................	0		
B. Appropriations anticipated (indefinite).........			
C. Other new authority( )..........			
D. Net transfers (+ or -)..........................	664,200		
2. Unobligated balance:			
A. Brought forward October 1.......................	102,800		
B. Net transfers (+ or -)..........................			
3. Reimbursements and other income:			
A. Earned............($			
B. Change in unfilled customer's orders (+ or -)...			
C. Anticipated for rest of year....................			
4. Recoveries of prior year obligations:			
A. Actual.............($ 0	0		
B. Anticipated for rest of year....................			
5. Portion not available pursuant to (-)			
6. Restorations (+) and writeoffs (-)($)			
7. Total Budgetary Resources..........................	767,000		
STATUS OF BUDGETARY RESOURCES			
8. Obligations incurred........($ 767,000	767,000		
9. Unobligated balances available:			
A. Apportioned, category A.........................			
B. Apportioned, category B.........................			
C. Other balances available........................	0		
10. Unobligated balances not available:			
A. Apportioned for subsequent periods*.............			
B. Withheld pending recission*.....................			
C. Deferred*..			
D. Unapportioned balance of revolving fund*........			
E. Other balances not available....................			
11. Total Budgetary Resources	767,000		
RELATION OF OBLIGATIONS TO OUTLAYS AND ACCRUED EXPENDITURES			
12. Obligations incurred, net (8-3A-3B-4A).............	767,000		
13. Net unpaid obligations:			
A. Obligated balance, as of October 1..............	223,295		
B. Obligated balance transferred, net (+ or -).....			
C. Obligated balance, end of period................	223,295		
14. Outlays (12+13A+13B-13C)....($ 767,000	767,000		
15. Change in accounts payable, net			
A. Accounts payable, net as of October 1...........	199,605		
B. Accounts payable transferred, net (+ or -)......			
C. Accounts payable, net, end of period............	199,605		
16. Accrued expenditures (14-15A-15B+15C) ($ 767,000	767,000		

*From S.F. 132

Sheila K Smith
(Authorized Officer)

03/15/90
(Date)

Bureau: Nat'l Oceanic & Atmospheric Administration

Identification of fund title and symbol:

Description	Oil Pollution Fund	- Natural Resource	Damage A
	r.13-4XX8190(14)		
BUDGETARY RESOURCES			
1. Budget authority :			
A. Appropriations realized			
B. Appropriations anticipated (indefinite)			
C. Other new authority ( )			
D. Net transfers (+ or -)	2,000,000.00		
2. Unobligated balance:			
A. Brought forward October 1,19__			
B. Net transfers (+ or -)			
3. Reimbursements and other income:			
A. Earned ($)			
B. Change in unfilled customers' orders (+ or -)			
C. Anticipated for rest of year			
4. Recoveries of prior year obligations:			
A. Actual ($)			
B. Anticipated for rest of year			
5. Portion not available pursuant to P.L. (-)			
6. Restorations (+) and writeoffs (-) ($)			
7. TOTAL BUDGETARY RESOURCES	2,000,000.00		
STATUS OF BUDGETARY RESOURCES			
8. Obligations incurred ($ 1,994,939.29)	2,000,000.00		
9. Unobligated balances available:			
A. Apportioned, category A			
B. Apportioned, category B			
C. Other balances available			
10. Unobligated balances not available:			
A. Apportioned for subsequent periods*			
B. Withheld pending rescission*			
C. Deferred*			
D. Unapportioned balance of revolving fund*			
E. Other balances not available			
11. Total Budgetary Resources	2,000,000.00		
RELATION OF OBLIGATIONS TO OUTLAYS AND ACCRUED EXPENDITURES			
12. Obligations incurred, net (8-3A-3B-4A)	2,000,000.00		
13. Net unpaid obligations:			
A. Obligated balance, as of October 1,19__			
B. Obligated balance transferred, net (+ or -)			
C. Obligated balance, end of period			
14. Outlays (12+13A+13B-13C) ($ 1,877,838.88)	2,000,000.00		
15. Change in accounts payable, net:			
A. Accounts payable, net, as of October 1, 19__			
B. Accounts payable transferred, net (+ or -)			
C. Accounts payable, net, end of period			
16. Accrued expenditures (14-15A-15B+15C) ($ 1,891,211.30)	2,000,000.00		

* 1.F.132

Denis R. Rode
Chief, Accounting Branch
(Authorized Officer)

9/15/

(Date)

Natural Resource Damage Assessm

Description	12-4028100(14)		
BUDGETARY RESOURCES			
. Budget authority:			
A. Appropriations realized....................................			
B. Appropriations anticipated (indefinite)..................			
C. Other new authority ( )...........			
D. Net transfers (+ or -)....................................	2,117,300.00		
. Unobligated balance:			
A. Brought forward October 1,19__			
B. Net transfers (+ or -)....................................			
. Reimbursements and other income:			
A. Earned..............................($)			
B. Change in unfilled customers' orders (+ or -)............			
C. Anticipated for rest of year................................			
. Recoveries of prior year obligations:			
A. Actual..............................($)			
B. Anticipated for rest of year................................			
. Portion not available pursuant to P.L. (-)................			
. Restorations (+) and writeoffs (-)......($)			
. TOTAL BUDGETARY RESOURCES....................................	2,117,300.00		
STATUS OF BUDGETARY RESOURCES			
. Obligations incurred.......................($ 117,300.00)	2,117,300.00		
. Unobligated balances available:			
A. Apportioned, category A......................................			
B. Apportioned, category B......................................			
Other balances available......................................			
0. igated balances not available:			
. Apportioned for subsequent periods*........................			
B. Withheld pending rescission*................................			
C. Deferred*...			
D. Unapportioned balance of revolving fund*..................			
E. Other balances not available................................			
1. Total Budgetary Resources....................................	2,117,300.00		
RELATION OF OBLIGATIONS TO OUTLAYS AND ACCRUED EXPENDITURES			
2. Obligations incurred, net (8-3A-3B-4A)........................	2,117,300.00		
3. Net unpaid obligations:			
A. Obligated balance, as of October 1,19__......................			
B. Obligated balance transferred, net (+ or -)................			
C. Obligated balance, end of period..............................			
4. Outlays (12+13A+13B-13C)............($ 117,300.00)	2,117,300.00		
5. Change in accounts payable, net:			
A. Accounts payable, net, as of October 1, 19__..............			
B. Accounts payable transferred, net (+ or -)................			
C. Accounts payable, net, end of period.........................			
6. Accrued expenditures (14-15A-15B+15C)........($ 117,300.00)	2,117,300.00		

from F.132

Sonia R. Rudo
Chief, Accounting Branch
Sonia Rudo 10/30/85
(Authorized Officer) (Date)

ATIONAL OCEANIC AND ATMOSPHERIC ADMIN

EAR-END CLOSING STATEMENT

13	69	X	5168		-0-			-0-					

10/31/89
DATE

I HEREBY CERTIFY THAT THE AMOUNTS SHOWN IN THIS REPORT ARE CORRECT. ALL KNOWN TRANSACTIONS MEETING THE CRITERIA OF 31 U.S.C. 1501 (A) HAVE BEEN OBLIGATED AND ARE SO REPORTED.

SIGNATURE

BUDGETARY RESOURCES

1. Budget authority:

A. Appropriations realized..............................

B. Appropriations anticipated (indefinite)..............................

C. Other new authority ( )..............................

D. Net transfers (+ or -)..............................

2. Unobligated balance:

A. Brought forward October 1,19__ ....

B. Net transfers (+ or -)..............................

3. Reimbursements and other income:

A. Earned..............................($

B. Change in unfilled customers' orders (+ or -)..............................

C. Anticipated for rest of year..............................

4. Recoveries of prior year obligations:

A. Actual..............................($

B. Anticipated for rest of year..............................

5. Portion not available pursuant to P.L. (-)..............................

6. Restorations (+) and writeoffs (-)......($

7. TOTAL BUDGETARY RESOURCES..............................

STATUS OF BUDGETARY RESOURCES

8. Obligations incurred..............................($ 1,848,700.00

9. Unobligated balances available:

A. Apportioned, category A..............................

B. Apportioned, category B..............................

C. Other balances available..............................

10. Unobligated balances not available:

A. Apportioned for subsequent periods*..............................

B. Withheld pending rescission*..............................

C. Deferred*..............................

D. Unapportioned balance of revolving fund*..............................

E. Other balances not available..............................

11. Total Budgetary Resources.............................. 1,848,700.00

RELATION OF OBLIGATIONS TO OUTLAYS
AND ACCRUED EXPENDITURES

12. Obligations incurred, net (8-3A-3B-4A)..............................

13. Net unpaid obligations:

A. Obligated balance, as of October 1,19__..............................

B. Obligated balance transferred, net (+ or -)..............................

C. Obligated balance, end of period..............................

14. Outlays (12+13A+13B-13C)..............($ 1,848,700.00) 1,848,700.00

15. Change in accounts payable, net:

A. Accounts payable, net, as of October 1, 19__..............................

B. Accounts payable transferred, net (+ or -)..............................

C. Accounts payable, net, end of period..............................

16. Accrued expenditures (14-15A-15B+15C)........($ 1,848,700.00 1,848,700.00

*From S.F.132

Walrus

Question: There have been reports that some hunters have traded walrus tusks taken under the Marine Mammal Protection Act for drugs. This is an abuse of the special exception provided in the Act to protect subsistence activities and jeopardizes the rights of the majority of law abiding hunters to continue this traditional practice. We cannot condone this drug trade and must take active measures to stop it dead in its tracks.

There have also been reports of hunters not taking all of the meat when they harvest a walrus. Education is the key to stopping wasteful harvest of walrus, in my opinion. Many hunters just don't understand what is expected of them under the law.

Could a cooperative education program modeled after the Arctic nesting geese program help address these problems?

Answer: The Service believes that such a statewide information and education program, directed at Alaskan Native marine mammal subsistence users would be very helpful. It should focus on development of education/interpretive materials designed to focus on Native Alaskans in rural subsistence based villages. Such an effort, developed cooperatively with the users, would foster the long term support necessary for compliance with current regulations. Program emphasis would be on population status, management strategies, and regulatory changes affecting sea otter, polar bear, and walrus. The ultimate intent would be to reduce adverse impacts of subsistence users on marine mammal populations by effecting voluntary changes in harvest patterns. Educational programs are expected to result in increased cooperation between subsistence users and wildlife managers. This kind of program would provide for long term cooperation in programs such as the marking, tagging, and reporting program or an alteration of traditional subsistence harvest practices and strategies (i.e., a reduction in the proportion of female and calf walruses or polar bears taken).

Arctic Nesting Geese

Question: Last year under the leadership of Senator Byrd and Senator McClure, the Senate added $300,000 to continue the cooperative management and education program for Arctic nesting geese.

Can you give us an update on the four species of geese?

Answer: There are encouraging signs for the populations of three of the four species of Arctic nesting geese. Pacific white-fronted geese reached a level of nearly 219,000 birds in the fall of 1989, representing a major increase from the 94,000 birds indicated in the fall of 1985. Cackling Canada geese stood at an all time low of 25,800 birds in the fall of 1984. In 1989, the population had increased to 76,800 due to a steady five-year upward trend. In January, 1990, 146,000 black brant were counted on wintering areas in the Pacific Flyway and in Mexico. Although the population of black brant has not increased as markedly as the other two species previously mentioned, the overall status is improved. Ongoing studies on the Yukon Delta indicate that black brant are increasing there and we expect continued increases if favorable nesting conditions occur. Emperor geese declined below the minimum population level specified in the plan (a three-year average of 60,000 birds) in 1986. Counts of this species each spring have not indicated that the population is increasing despite favorable nesting conditions in the past few years. The population was estimated at 45,800 birds in May, 1989. Harvest of all four species of geese has been reduced during the period in which the plan has been in effect compared to years prior to 1984. Accelerated efforts have been directed toward research and reducing harvest of emperor geese since 1986.

While recent population increases are generally encouraging, the present levels remain below the long-term objectives: Pacific white-fronted geese - 300,000; cackling Canada geese - 250,000; black brant - 185,000; and emperor geese - 150,000.

Follow-Up: If some of the birds are still in trouble, why didn't the Service request continuation of this funding in its FY91 base program?

Answer: The Service feels that while recovery of these species may take longer at the reduced funding level, the increased awareness created by previous years funding of management information and education programs, including education materials, will ultimately achieve recovery objectives.

Construction

Question: Last year Congress appropriated over $58 million for FWS construction, but Alaska only got $320,000 in new money. The year before Congress appropriated roughly $20 million and Alaska got zero. Alaska has 85 percent of the National Refuge System, yet has received less than one-third of one-percent of the construction dollars over the past two years.
Why isn't a greater emphasis placed on Alaska given the role it plays in the National Wildlife Refuge System?

Answer: Construction budgets have been limited to projects with health and safety considerations. Minimal amounts have been requested for new construction to meet resource requirements and to support public use. Because the Alaskan refuges as a group are relatively new, they tend to have more up-to-date equipment and facilities and proportionately fewer high priority (i.e. health and safety related) projects than refuges in the other regions. Until FY 1989 the Alaskan refuge Comprehensive Conservation Plans which were mandated by Congress under ANILCA had not been completed. Now that they are complete, it is appropriate to request funding to implement the programs which have been approved in these plans.

Question: Would the Service use additional funds to complete the facilities at Kenai NWR and in Homer for the Alaska Maritime NWR if Congress appropriated them?

Answer: Yes, if appropriated the Service would use additional funds to complete these projects. Estimates of funding needed for work at Kenai and Homer have increased significantly in the last year.

Question: If past history is any indicator, we will probably be marking up the Interior Appropriations bill in July or August, depending of course on Chairman Byrd's and Senator McClure's schedule. Will you please provide the Committee with your program for visitor and employee facilities for every refuge in Alaska by July 1?

Answer: Yes, the Service will provide that information before July 1, 1990.

QUESTIONS SUBMITTED BY SENATOR THAD COCHRAN

Dahomey National Wildlife Refuge

Question: Is the proposed Dahomey National Wildlife Refuge an important priority for accomplishing the goals of the North American Waterfowl Management Plan?

Answer: Yes. The proposed Dahomey National Wildlife Refuge is a specific wetland protection and enhancement project of the Lower Mississippi Valley Joint Venture of the North American Waterfowl Management Plan, and its implementation will be a direct contribution to the wetland protection goals of the Lower Mississippi Valley Joint Venture. The area is also identified as a priority site within the Mississippi component of the National Wetlands Priority Conservation Plan. Furthermore, protection of the area has been the priority NAWMP project of the Mississippi Nature Conservancy.

Question: It is my understanding that the area would offer excellent wintering and migratory habitat for mallards, pintails and wood ducks, and that the area has extensive wildlife values, including waterfowl, deer and turkey. I also understand that it would offer excellent recreational and educational opportunities in an area of Mississippi with limited public land accessibility. Do you agree?

Answer: Yes. The proposed Dahomey NWR is an excellent example of the forested wetland complex that once dominated the landscape of the Lower Mississippi Valley. The historic loss of this nationally significant resource has significantly reduced the biological diversity of what was North America's largest forested wetland ecosystem. Dahomey is representative of the broad functional wetland values that characterized this now endangered habitat. Not the least of these values is its benefit as wintering habitat for migratory birds. The recreational opportunities of forested wetlands have been a major influence on the culture of the Lower Mississippi Valley. Dahomey NWR will protect this recreational resource and provide public use benefits, recreational and educational, in an area where they are currently lacking.

Question: Is Dahomey one of the few places left in Mississippi where there is an opportunity to save a significant portion of the remaining bottomland hardwoods on the Mississippi River Delta?

Answer: Definitely. The 12,000-acre proposal contains nearly 9,000 acres of bottomland hardwoods constituting the largest remaining bottomland hardwood forest in the Delta of Mississippi. There is no other block of forested wetland habitat of comparable size or quality within the region. The remaining 3,000+ acres are forested wetlands that were previously cleared for agriculture. Significant opportunities exist to restore, enhance, and manage wetlands. A specific strategy of the Lower Mississippi Valley Joint Venture is to enlist the engineering design and construction expertise of the Corps of Engineers to restore and enhance wetland hydrology on the refuge. Wetland protection, restoration, and enhancement through projects such as the proposed Dahomey National Wildlife Refuge will be essential to maintaining and increasing biodiversity within the LMV and fulfilling the goals and objectives of the NAWMP.

QUESTIONS SUBMITTED BY SENATOR DON NICKLES

Elmer Thomas Dam

Question: This subcommittee provided the Service's request of $3 million last year for design and construction of a new dam at Lake Elmer Thomas on the Wichita Mtns. NWR. The subcommittee also included report language which provided that those funds be used in a manner which did not preclude the full restoration of Lake Elmer Thomas. As a result of this language, the Service has been working with the U.S. Field Artillery Center at Fort Sill to share the burden of replacing the dam.

The Service is requesting $5.8 million for fiscal year 1991 to continue design and construction. The total cost of the project is estimated to be $15 million in fiscal year 1991 dollars.

What is the status of the Service's negotiations with Ft. Sill?

Answer: On January 30, 1990, Service personnel met with Major General Hallada and Fort Sill staff to discuss the design, construction, and funding status of Elmer Thomas Dam. The Service has reached an agreement in principal on a Memorandum of Understanding regarding construction of a new replacement dam. The Memorandum of Understanding will delineate specific construction items that would be provided by Fort Sill in support of construction of a new permanent water storage dam.

The Service has investigated, at the request of Major General Hallada, the cost estimates if the dam height was reduced so that the normal reservoir pool was 9 feet lower than that for the replacement dam. This cost information has been forwarded to General Hallada. The Service is currently awaiting a reply on the acceptability of the plan. The lower reservoir dam will save approximately $800,000, but involves a significant increase in construction effort from Fort Sill. However, the effect of spillway flows on downstream areas have not been studied.

Question: Will the cooperation of the Service and Ft. Sill, plus the appropriated funds be sufficient to fully restore Lake Elmer Thomas? If not, how much additional construction appropriations will be necessary to fully restore the lake?

Answer: No. For the full-height dam alternative, the additional funding requirement is estimated at $3.1 million beyond the amount already appropriated and the $5.8 million requested for fiscal year 1991. If the dam height is lowered by 9 feet, the additional funding requirement is estimated at $2.3 million above existing appropriations and the $5.8 million request.

Question: Does the Service support fiscal year 1991 appropriations sufficient to fully restore Lake Elmer Thomas?

Answer: The Service will support and provide all necessary design and construction management effort to support the plan finally selected. Due to the limited wildlife habitat enhancement value of the dam, the Service requested appropriations of $5.8 million for a 100-year flood protection structure.

Question: When does the Service anticipate beginning and completing the construction of the new dam?

Answer: First a decision must be made about the availability of funding for the full-height dam. For the 100-year flood detention dam, assuming work on final design and construction specifications can begin in July 1990, construction could begin by June 1991, and the project completed by about June 1992.

For the full-height dam, assuming final design can begin in July 1990, construction could begin by November 1991. The project (including Fort Sill construction participation) would be completed in about October 1993.

Wichita Mountains National Wildlife Refuge

Question: The Wichita Mtns. National Wildlife Refuge is the most widely visited NWR in the country, yet it lacks a sufficient visitor center. The current building which serves as a visitor center and administrative building was constructed in the 1930's and is poorly located.

Last year, this subcommittee appropriated $450,000 to plan a visitor center for the Wichita Mtns. National Wildlife Refuge.

Is the planning process for the new visitor center complete?

Answer: A project management plan has been developed that describes the project, funding, responsibilities, and schedule for completion. These are the major elements of the Project Management Plan. The new facility as presently configured, is a 20,000 square foot building. Exhibition space, an auditorium, book sales area, library, lounge, offices, and restrooms are also included in the building. Interpretive displays could be a major portion of the visitor center. The Service is in the process of selecting an architectural and engineering firm to begin the project planning phase. The selection process is scheduled to be completed by June, 1990. Planning and design of the facility could be completed by August of 1991, however additional funding of $300,000 is needed for completion of planning and design.

Question: What is the funding capability of the Service to begin construction of a new visitor center in fiscal year 1991?

Answer: Funding required to complete the planning, design, and construction of the project is estimated to be $5 million. As the President's budget requests funding for highest priority construction projects, primarily those for the alleviation of threats to health and safety, no funds are requested for construction of the visitor center.

Proposed Deep Fork National Wildlife Refuge

Question: The Deep Fork River has long been recognized by the State of Oklahoma and the Service as a nationally important bottomland hardwoods ecosystem. Past efforts to preserve this area through land acquisition have been unsuccessful due to an inability to identify a substantial acreage of contiguous willing sellers.

Recently, the State of Oklahoma and the Service have concentrated their efforts on the lower end of the Deep Fork between the Okmulgee Wildlife Management Area and Lake Eufaula. Willing sellers have indicated interest, and the state legislature is now considering legislation to allow the establishment of a new national wildlife refuge.

Does the Service support the creation of a NWR on the lower end of the Deep Fork? If so, where does this refuge rank in the Service's priorities?

Answer: The Service supports the creation of a national wildlife refuge on the Deep Fork River because it is recognized as an important bottomland hardwood system in the North American Waterfowl Management Plan. The data currently available to the Service on the Deep Fork River was gathered for an earlier refuge proposal located upriver from the area now under consideration. Service field biologists are now involved in evaluating the habitat resources of the Lower Deep Fork. This data will be used to rank this project nationally against other refuge proposals. At the present time it is unranked.

Question: As this area has been identified as critical habitat under the North American Waterfowl Management Plan, is it necessary for Congress to specifically authorize the creation of a NWR on the Deep Fork?

Answer: General land acquisition authorities already exist for use of LWCF funding under the Emergency Wetlands Resources Act of 1986, the Fish and Wildlife Act, and the Migratory Bird Conservation Act for acquisition with MBCA funds which allow for the protection of valuable habitat available on the Deep Fork River.

Question: How much land acquisition would be necessary to protect this area, how much would it cost, and what are the funding alternatives for such acquisition?

Answer: Preliminary data anticipates a refuge proposal of 14,000 acres along a reach of the Deep Fork running from Okmulgee Wildlife Management Area to Lake Eufaula. It is too early to have an accurate cost estimate for this project. Preliminary estimates of value should be available by May 31, 1990. This funding could be appropriated under the Migratory Bird Conservation Account or the Land and Water Conservation Fund.

Question: What protections can be provided to non-willing sellers adjacent to potential refuge land who are concerned about trespassing, etc.?

Answer: All areas acquired by the Service would be fenced or posted with National Wildlife Refuge signs. The integrity of these boundaries would be maintained by law enforcement authority provided by the refuge.

Tishomingo National Fish Hatchery

Question: The Oklahoma Department of Wildlife Conservation has undertaken an immensely successful program of establishing trout fisheries across the State. To date, six fisheries are in operation, with over 400,000 trout stocked annually.

One problem the ODWC has encountered is the lack of a cost-efficient, reliable, year-round, in-State source of trout to stock these fisheries. Currently, trout are purchased from private sources in Missouri and Colorado, and the Norfork NFH in Arkansas.

What is the funding capability of the Service to study the potential of producing trout at the Tishomingo NFH? How much would such a study cost in fiscal year 1991?

Answer: The Service has no funding capability to study the feasibility of producing trout at Tishomingo National Fish Hatchery, a warmwater facility. A reasonable estimate for such a study in FY 1991 would be $100,000; however, the Service has already concluded that the potential for rearing trout at Tishomingo NFH no longer exists. In FY 1989, $190,000 was appropriated for the purchase of 150 acres of land adjacent to the Tishomingo Hatchery and the Service secured an easement for protection of the water supply. On that land was a small spring that had potential for producing a limited number of trout. The land, however, was ultimately sold to a private party, so the potential for producing trout was lost. The spring's trout producing potential relied on its cool water at the spring site itself. The spring flows for about one mile and then feeds into the much larger Pennington Creek, Tishomingo's main water supply. Pennington Creek is considerably warmer than the spring water, and when the creek finally reaches the hatchery, the water temperatures are too warm to make the rearing of trout feasible.

Question: A new trout fishery below Broken Bow Lake in McCurtain County, Oklahoma, has generated support for examining the potential of the area for the production of trout. What is the funding capability of the Service to study the potential of producing trout below Broken Bow dam? How much would such a study cost in fiscal year 1991?

Answer: The Service presently has no funding capability to study the feasibility of a trout hatchery below Broken Bow Dam in Oklahoma. A reasonable estimate for such a study in fiscal year 1991 would be $750,000, based on recent experience in the development of feasibility studies for a hatchery/technology center.

QUESTIONS SUBMITTED BY SENATOR PETE V. DOMENICI

Bosque del Apache National Wildlife Refuge

Question: Last year, at my request, funding was provided to begin upgrading the antiquated facilities at the Bosque del Apache Wildlife Refuge in New Mexico. Specifically, the water supply system has been improved. It is my understanding that the work that has been performed has been extremely important in ensuring an adequate water delivery system for the refuge. However, other improvements at Bosque are needed. All of the facilities are very old. The maintenance facilities and storage buildings require extensive modernization. Could you provide for the Committee an assessment of the needs at Bosque, along with a cost estimate?

Answer: The Refuge requires the construction of a new 6,000 square foot heated service building for repairing and servicing refuge vehicles and heavy equipment. Construction of a new heated oil and paint storage building for bulk supplies and a new equipment storage building also are needed to protect vehicles and equipment from inclement weather. Existing storage buildings need major rehabilitation to render them serviceable: door and window replacements, roof repairs and plaster repairs are among the many needed refurbishments. It is estimated that $1,850,000 is required to remedy these major deficiencies and provide adequate facilities for support of refuge programs.

Dexter National Fish Hatchery

Question: Another Fish and Wildlife area in New Mexico requires modernization. The Dexter Fish Hatchery is an important facility that provides for many of the endangered southwest fish. It, also, is an old facility that has not received the necessary funding to keep the hatchery adequately maintained. Consequently, it is my understanding that the needs are great. A new office and wet laboratory are necessary to allow the important work at the facility to continue. Would you please comment to the Committee on the overall needs at Dexter.

Answer: The building now used for office space, laboratory, incubation, and holding fish was built nearly 25 years ago to serve a small warmwater hatchery with a staff of not more than 5 employees. In the last 15 years, Dexter has been transformed into the Nation's leader for endangered fish species. Current activities at Dexter include the production of endangered fish for reintroduction, provision of refugia habitat for species with limited natural habitat, and development of cultural techniques for endangered and threatened species. Funds have previously been made available to increase pond space for these new responsibilities, but laboratory and office space remain inadequate for the current staff of eight employees. Presently, five employees are carrying out their responsibilities in temporary space located in a converted residence and a storage building.

A new office and wet laboratory building would provide consolidated office space for the staff and improved, environmentally-controlled laboratory space for developing cultural methods for endangered species. The cost for the construction of such a building in FY 1991 is $1,600,000.

An increase of $105,000 and 1 FTE is needed annually to perform additional important studies in the management and recovery of endangered species and to provide for increased staffing during the spring spawning season.

Current unfunded maintenance needs at Dexter National Fish Hatchery total $301,000 as identified in the Service's Maintenance Management System.

Cooperative Research Untis

Question: Two years ago, funding was provided to establish several new fish and wildlife cooperative units. One of the new units is located at New Mexico State University. It is my understanding that important work is being performed at that unit. However, the new units have never received sufficient funds to allow the facilities to reach full capacity. For example, only two employees are at NMSU, while three are actually needed. Would you please comment on the nationwide needs of the Coop Units?

Answer: The President's proposed budget for the Cooperative Research Units includes a $650,000 increase, bringing the FY 1991 total to $7,186,000. At the end of FY 1990, it anticipated that 14 vacancies will remain. At the proposed FY 1991 level it is anticipated that five vacancies at combined units and 4 vacancies at single discipline units will remain and one of these will be the Assistant Unit Leader -Fisheries position at the New Mexico Unit. To fill all vacancies in the coop units nationwide, an additional $614,000 is needed, for a total budget of $7,800,000.

Rio Grande Bosque

Question: Several years ago, I brought to the Service's attention, interest being expressed in New Mexico for research funds to instigate a comprehensive study of the riparian ecosystem along the Rio Grand Bosque area. Actual funding for such a research effort has never been provided. Would you please review the present situation in terms of research proposals and report back to the Committee with your findings?

Answer: The University of New Mexico has completed a hydrologic study of the Rio Grande. This preliminary study was funded ($8000) by the U.S. Fish and Wildlife Service, National Ecology Research Center. The Center is also sponsoring ($30,000) a project which will map the vegetative components associated with the Rio Grande from Velarde to Elephant Butte reservoir. This project is scheduled to be completed by midsummer 1990. The Southwest Region and the National Ecology Research Center jointly prepared a research proposal for the middle Rio Grande. This comprehensive proposal would require 10 years to complete at a total estimated cost of $5.5 million. First year costs for this project are $785,000. Specific tasks include completing vegetation mapping for the entire Rio Grande and trend analysis, compilation of hydrologic data, floral and faunal surveys, intensive field investigations, and development of hydrologic, vegetation, and fish and wildlife models. Effort would be devoted primarily to data collection and model development during the early phases of this project.

Cultural Resource Management Program

Question: Lands under the jurisdiction of the F&WS contain many archaeological resources because prehistoric peoples tended to congregate near the streams, lakes, marshes, and rivers that are now protected as fish and wildlife habitat. The most recent statistics demonstrate that the F&WS has surveyed only 11% of the lands that it manages. Although archaeological sites are abundant on lands managed by the Fish and Wildlife Service, the F&WS has never had a line item for cultural resources management.

Please describe the existing cultural resources management program of the F&WS, with particular emphasis on archaeological resource identification, inventory, curation, interpretation, education, and law enforcement, and detail the funding allocated to each of these functions.

Answer: Cultural resource management activities conducted by the Fish and Wildlife Service are directed by the requirements of the National Historic Preservation Act of 1966, as amended; the Archaeological Resources Protection Act of 1979, as amended (Act); the Antiquities Act of 1906; and Federal regulations found in Titles 36, 43, and 50 of the Code of Federal Regulations.

Service policy on cultural resource management is addressed in the agency's administrative and refuge manuals and also a handbook.

The Service's Federal Preservation Officer is the Assistant Director - Refuges and Wildlife. The Service Archaeologist position is located in the Washington Office's Division of Refuges. Each Service region has an individual designated as a Historic Preservation Officer. That individual is responsible for working with field stations within that region on various cultural resource activities such as completing surveys, curating archaeological collections, site protection, and coordinating with State Historic Preservation Officers. With the exception of the Service's Southeastern Regional Office, all geographical Regional Offices have a professional archaeologist or historian on staff to undertake this work.

Based on FY 1988 data, the Service has completed field surveys on approximately .7% of its 91 million acres. Surveys have resulted in the identification of about 6800 archaeological and historic sites.

Most funding for cultural resource management comes from the Service's Refuge Operations subactivity. The Service estimates that approximately $700,000 is spent annually for program activities such as survey and protection work. Of this total, about $300,000 is spent annually on cultural resource surveys for compliance with Section 106 of the National Historic Preservation Act, $20,000 on data recovery associated with mitigation of projects affecting cultural resources, and $40,000 on law enforcement work each year. An estimated $20,000 of the law enforcement funding is attributed to investigations conducted by Service special agents. The remaining portion of the overall funding is used primarily for salaries, curation of artifacts, and interpretation. In FY 1988, Service Regional Offices reported 75 documented violations of the Act or related statutes. Currently, the Service has two pending cases involving investigations of destruction of archaeological resources. Training for employees on archaeological resources protection and law enforcement is available through courses offered by the Federal Law Enforcement Training Center and Service law enforcement refresher courses.

With few exceptions, collected artifacts and other materials are stored by the Service in facilities or museums that meet basic curatorial standards established by law and Department of the Interior policies. No figures are available as to how much funding the Service expends each year on curation of archaeological and historical materials.

The Service does not have detailed information as to how many of its interpretive and educational activities involve cultural resource information. On many refuges, interpretive signs are developed to provide the public with information on the history and prehistory of the area. Approximately 12 Service visitor center's display some information on cultural resources, most notably the Bertrand steamship exhibit at DeSoto Refuge in Iowa.

QUESTIONS SUBMITTED BY SENATOR FRANK R. LAUTENBERG

Land Acquisition Funding

Question: The Fish and Wildlife Service (FWS) is proposing to decrease funding by $11.3 million for its acquisition programs under the Land and Water Conservation Fund Act, the Endangered Species Act, the Fish and Wildlife Act, the Recreational Use of Conservation Areas Act and the Emergency Wetlands Resources Act. Is there a reduced need for acquisition that justifies the proposed decrease in funding?

Answer: The Service continues to have interest in land acquisition projects that exceed available funding. The level of funding requested is based upon the relative importance of Service lands to those of the other three agencies using the Administration's integrated ranking criteria. The FY 1991 budget request contains $49,200,000 for land acquisition and $7,500,000 for acquisition management. It is estimated that the above funding will acquire 49,700 acres at specific projects. The Service also has budgeted $30,600,000 in its Migratory Bird Conservation Account with which to acquire approximately 50,000 acres in FY 1991.

Question: Given the new budget demands of the America the Beautiful program, how does the FWS intend to fund the completion of acquisition for refuges with willing sellers under existing law?

Answer: The Administration has requested $56,700,000 for land acquisition under the America the Beautiful program. The land acquisition proposal includes twenty-eight specific projects under five categories, including inholdings. Of the twenty-eight projects, only three are new starts in FY 1991 and the other twenty-five are for acquisition at refuges from willing sellers.

Question: Three New Jersey National Wildlife Refuges are funded under the Emergency Wetlands Resources Act, including: Cape May National Wildlife Refuge, Edwin B. Forsythe National Wildlife Refuge, and Great Swamp National Wildlife Refuge. The administration proposes to cut the funding program for these refuges by $9.8 million. Each of these refuges is facing great pressure from surrounding development. This development is causing significant increases in the price of undeveloped land. From the FWS perspective, please assess the status of acquisition efforts at each of the above mentioned refuges.

Answer: The Fish and Wildlife Service has been very successful with land acquisition at Cape May National Wildlife Refuge. The refuge when completed will contain about 15,300 acres. It is estimated that the Service will have acquired 2,102 acres by the end of FY 1990 and another 1400 acres is proposed for FY 1991. A total of 11,798 acres remain to be acquired after FY 1991. There continues to be many willing sellers within the refuge boundary.

At Edwin B. Forsythe National Wildlife Refuge 37,559 acres have been acquired through FY 1989. The refuge will contian 47,440 acres when complete. It is estimated that about 1,000 acres will be acquired in FY 1990 and our most current estimates indicate that about 500 acres is proposed to be acquired in FY 1991 with the requested appropriations of $1,000,000. The acreage figure differs from the FY 1991 budget justifications due to more accurate information being acquired as we move further along in the land acquisition process and more of the required documents are completed. A total of 8,381 acres remain to be acquired after FY 1991. Many willing sellers are currently awaiting future acquisition funds in order to sell to the Service.

Great Swamp National Wildlife Refuge acquisition through FY 1989, has involved the purchase of 6,971 acres. During FY 1990 about 328 acres will be acquired, and 250 acres are proposed for FY 1991. The acreage figure differs from the FY 1991 budget justifications due to more accurate information being acquired as we move further along in the acquisition process and more of the required documents are completed. The refuge will contain 9,322 acres when completed. After FY 1991 about 1,773 acres remain to be acquired.

Question: Also, please identify the status of the Service's current efforts and future plans for each of the above mentioned refuges.

Answer: The Service has an active land acquisition program at all three refuges. We anticipate that all available land acquisition funds for FY 90 will be obligated. The following table, indicates the current and future acquisitions:

	Cape May NWR	E. B. Forsythe NWR	Great Swamp NWR
	(Acres)	(Acres)	(Acres)
Acquired Thru FY 1989	1,002	37,559	6,971
planned FY 1990	1,100	1,000	328
proposed FY 1991	1,400	500	250
Remaining	11,798	8,381	1,773
Total	15,300	47,440	9,322

Question: How will the proposed $9.8 million cut in Emergency Wetlands Resources Act funds impact acquisition at each of these refuges?

Answer: Acquisition at all three of the refuges is proposed to be accomplished using the Emergency Wetlands Resources Act. However the proposed $9.8 million reduction in the total of the Service's land acquisition funding will not have any effect on Cape May, E. B. Forsythe or Great Swamp. The requested appropriations for all three refuges is greater in FY 1991 than the amounts appropriated in FY 1990. The proposed FY 1991 funding for Cape May is $3.5 million versus $1.0 million in FY 1990, E. B. Forsythe is $1.0 million versus $.85 million, and Great Swamp is $1.375 million versus $1.0 million. Due to the differences in value of different types of property, the cost per acre may change considerably from year to year.

Wallkill National Wildlife Refuge

Question: I commend the Fish and Wildlife Service for its identification and administrative creation of the Wallkill National Wildlife refuge in Sussex County, New Jersey. With rising land costs in this area, what is the FWS plan for acquiring land from the many willing sellers located within the refuge boundary?

Answer: All of the necessary planning documents for this proposed refuge have been completed. The project must now compete for priority with other land acquisition projects for land and water conservation funds. The project is currently ranked number 55 out of 93 projects on the Service's December 15, 1989 Land Acquisition Priority List. The prospect of funding in the immediate future is low.

Question: How long does the Service estimate it will take for complete acquisition of this refuge?

Answer: The Service could complete acquisition within 5 to 7 years subject to the availability of adequate funding.

Question: Have any funds been designated for operations and maintenance of this refuge?

Answer: Operations and Maintenance (O&M) funds have not been designated for this refuge in FY 91. Following the successful acquisition of lands, O & M funds will be identified.

SUBCOMMITTEE RECESS

Senator REID. I thank you very much. The subcommittee will stand in recess until 10 a.m., Monday, April 2, when we will hear testimony from the Bureau of Land Management.

[Whereupon, at 2:33 p.m., Tuesday, March 27, the subcommittee was recessed, to reconvene at 10 a.m., Monday, April 2.]

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1991

WEDNESDAY, APRIL 18, 1990

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 2:05 p.m., in room S–128, the Capitol, Hon. Harry Reid presiding.

Present: Senators Reid, Bumpers, McClure, Cochran, and Domenici.

NATIONAL GALLERY OF ART

STATEMENT OF J. CARTER BROWN, DIRECTOR

ACCOMPANIED BY:
- DANIEL HERRICK, TREASURER
- WILLIAM H. ROACHE, BUDGET OFFICER
- ROGER MANDLE, DEPUTY DIRECTOR
- ANNE B. EVANS, ADMINISTRATOR
- PHILIP C. JESSUP, JR., SECRETARY-GENERAL COUNSEL
- CAROL KELLEY, ADMINISTRATIVE ASSISTANT TO THE DEPUTY DIRECTOR

PREPARED STATEMENT

Senator REID. The subcommittee will come to order.

This is the time scheduled for the Department of the Interior and Related Agencies Subcommittee to consider the fiscal year 1991 budget request for the National Gallery of Art and the National Park Service.

We will consider the request of the National Gallery of Art first. Testifying on behalf of the National Gallery is the Director, J. Carter Brown.

The National Gallery of Art's total fiscal year 1991 request is $48,903,000, an increase of $6,386,000, 15 percent above the fiscal year 1990 appropriation.

The request for salaries and expenses is $46,098,000, an increase of $5,386,000, or 13 percent above the current year. In addition, the request for full-time equivalent employment is 874, an increase of 20 over the current year.

The request for repair, restoration, and renovation of buildings is $2,805,000, an increase of $1 million, or 55 percent, over the current appropriation.

Mr. Brown, your opening statement will be included in the record. Please introduce your colleagues that are with you, if you wish, and make any statement that you want so that we can go to the questions.

[The statement follows:]

STATEMENT OF J. CARTER BROWN

The National Gallery's federal funds budget request for the fiscal year 1991 is $48,903,000—a net increase of $6,386,000 over the 1990 budget of $42,517,000. Comprising the total increases are: personnel compensation and benefits—$2,657,000; special exhibitions program—$1,500,000; rents, communications and utilities—$327,000; printing and reproduction—$40,000; equipment, materials, supplies, services, travel, and transportation—$862,000; repair, restoration and renovation—$1,000,000. The budget includes positions consistent with an OMB limitation of 874 FTE (full-time equivalent) employment.

Attendance at the National Gallery continues at a high level. In fiscal year 1989 the attendance was 6,221,682. The primary reason can be attributed to the enthusiasm of the public for our special exhibitions such as the Japan, Cezanne, Michelangelo, and History of Photography exhibits.

Forty-two percent ($2,657,000) of the total increase is associated with personnel compensation. This increase provides: $275,000 for mandatory within-grade and wage-board step increases and merit pay; $138,000 for increased costs of Health Benefits; $1,001,000 for annualization of the fiscal year 1990 pay raise; $21,000 for increased costs of workers' compensation; $15,000 for annualization costs of 2 new positions approved in fiscal year 1990; $220,000 for increased costs of the Federal Employees' Retirement System (FERS); $93,000 for one more compensable day; $487,000 for 20 FTE employment at three-quarter year funding; $29,000 for increased costs of upgrading 86 guard positions to GS-5; and $378,000 for three-quarter year funding of 50 percent of a projected 3.5-percent pay raise in January 1991.

Twenty-three percent ($1,500,000) of the total increase is requested for our special exhibitions program. The increase consists of a one-time special additional funding being requested for the Circa 1492 Columbus exhibition which opens in October of fiscal year 1992. Planning funds of $500,000 were previously appropriated in fiscal year 1990. Vigorous fund raising efforts in the private sector are being undertaken to raise private support for this major exhibition. At this time $3,000,000 has been raised from corporate and foundation sources. The costs of this exhibition are expected to amount to $7.1 million.

Sixteen percent ($1,000,000) of the tonal increase is requested for the Repair, Restoration and Renovation of Buildings program approved by OMB and included in the President's budget for fiscal 1991. This overall program includes the National Sculpture Garden and sculpture galleries, environmental work, energy management, remodeling to better utilize existing space, new lighting systems in public galleries, and general repairs. In addition, the Renovation program includes such multi-year projects as: asbestos abatement, replacement of the West Building skylights, improved shop ventilation, elevator renovation, and installation of a computerized energy management system.

Thirteen percent ($862,000) of the total increase is needed to cover added quantities and increased costs of equipment, materials, supplies, services, travel and transportation in support of the basic Gallery operations. This amount consists of $14,000 for travel, $7,000 for transportation, $114,000 for supplies and materials, $409,000 for services; and $318,000 for equipment.

Five percent ($327,000) of the total increase is required for the increased costs of rents, communications and utilities. This amount consists of $435,000 to cover water and sewer costs; $18,000 to cover increased costs of warehouse structural rental and utility rates; $60,000 for increased telephone and postage costs; $6,000 for increased costs of photocopies; all partially offset by an expected $192,000 decrease in the costs of steam and electricity.

The final one percent ($40,000) of the total increase is for increased costs and wider public distribution of the calendar of events and audiovisual film brochures. New brochures are also planned for school, tour, family programs, senior citizens, family self guides and special programs.

INTRODUCTION OF ASSOCIATES

Mr. **Brown**. Thank you very much, Mr. Chairman. I have here on my left Daniel Herrick, the Treasurer and Chief Financial Officer of the National Gallery; our Budget Officer, Bill Roache; the Deputy Director of the gallery, Roger Mandle; and the Administrator of the gallery, Anne Evans. And we have others, Carol Kelley and Phil Jessup, our Secretary-General Counsel.

Senator **Reid**. Please proceed.

Mr. **Brown**. We have had a banner year, Mr. Chairman, and are looking forward to an even more exciting one because we are gearing up for our 50th anniversary which falls in the year 1991. We are about to open a couple of exhibitions which, in addition to what we have on view now, will bring the quality and quantity of art that we have on loan at the National Gallery to, I think, a record pitch, certainly in value. And we are experiencing, at least in this beautiful weather, some very encouraging uptake in our attendance, our visitation.

We have been doing some in-depth analysis of our needs over the long haul and in the near term, and we would be very happy to address these questions and any that you care to bring up.

SECURITY

Senator **Reid**. Thank you very much.

With all that is going on internationally with thefts of paintings and vandalism of paintings, it is my understanding that the gallery has just completed a study of its security procedures. This is, of course, timely, and while you may be reluctant to discuss all your findings publicly, this study apparently does indicate that there are some shortcomings. Is that correct?

Mr. **Brown**. We think it can be improved.

We naturally were brought up very short, as was the world in general, by the most serious theft ever to occur in an American art museum. That happened only weeks ago at the Gardner Museum in Boston. These are irreplaceable works of art. The value of $200 million has been attached to the theft, but that is only a guess. I mean, how do you put a value on one of the only Vermeer's in the world? There are only 35 of them.

The Gardner Museum's experience led us to take a look at how we stand, and I must say that we came out with a very positive feeling that with luck that kind of problem might not happen to us given the precautions we already have taken.

But it did come at a very interesting moment in our lives because, starting last fall, we had independently engaged a security consultant to review the entire question of security at the National Gallery, and we feel there are areas in which we should and can improve. And with this new climate now which the Gardner theft has brought psychologically with the press reporting at enormous length and bringing out schedules of all the thefts that had happened in the art world in the last few years and making of it a kind of trend, that we feel it is only responsible to try to telescope the improvements that we had thought of doing more or less over the next 5 years to try to get them done as soon as possible. This would be more cost effective. There would be economies of scale.

There would be economies of efficiency in doing it all at once. And most important, there would be benefits in terms of the safety of the national heritage.

And so, we hoped that we might get permission from this committee to see if we could accelerate that program in the coming year.

Senator **Reid**. This would cost about $1 million?

Mr. **Brown**. We have done a very careful analysis and it does add up to some $985,000. Some additional costs we are not prepared to plunge into immediately, because they have to do with renovations related to fire prevention, and there are changes in the technologies there which still require some study. So, the $985,000 is the portion we can begin with right away.

Senator **Reid**. How do you feel about reprogramming some funds this year for these security improvements?

Mr. **Brown**. Well, we do have some funds that the Congress has appropriated toward our long-range goal of creating a national sculpture garden in the land immediately adjacent to the West Building. We are in the design process there. These are no-year funds. We would not be obligating them this year, and so if we could have your permission, we would like to utilize some of those funds for our security priorities which therefore would not require an increase in our current appropriation.

Senator **Reid**. If you would give us that request in writing at the earliest possible date, we'll be happy to review that.

Mr. **Brown**. Wonderful, Mr. Chairman, we would like to do that.

NATIONAL SCULPTURE GARDEN

Senator **Reid**. Before we leave the sculpture garden, prior to the stock market crash in 1987, the gallery reportedly had anticipated at least one major donation of art work to the sculpture garden. It is my understanding this has not materialized through no fault of the gallery. Is that right?

Mr. **Brown**. This is true.

Senator **Reid**. Had there been other major gifts negotiated for the garden? What is the answer to that question?

Mr. **Brown**. Yes; we have a fund which has now reached eight figures that could be applied toward the purchase of sculpture for a sculpture garden, but it is contingent on the donor approving what we do with it. And part of the donor's curiosity is to make sure that the sculpture garden proceeds in a way that they feel is going to cast glory on all of us. And therefore, we have a chicken and an egg, Mr. Chairman, and we need to get some design before we really can begin the acquisitions program.

We have been hard at that. We had a competition under the Government regulations for architects and engineers, had a very interesting week of interviews with some of the top architects and landscape architects in the country. We selected the firm of Daniel Kiley & Associates. Dan Kiley is perhaps the dean of landscape architecture in America, is very highly regarded nationally and internationally. And we have been working with him on plans.

The first set of plans that came to us were then costed out, and we found that we had a tiger of about $20 million by the tail. And we decided that that was an unrealistic target for a level of expenditure for this program. And so, we have sent the architect back to the drawing boards to come up with a solution that would be much less costly. And that is in process now, and we will keep you and the committee informed as that proceeds.

ART DONATIONS

Senator Reid. Would you tell the committee what has been the gallery's experience over the last 10 years in relation to donations? Are they increasing, decreasing or staying about the same?

Mr. Brown. We have had some extraordinary donations in the last 10 years. Mr. and Mrs. Paul Mellon come to mind. They continue their fabulous philanthropy toward us in chunks of works of art.

But I can tell you, Mr. Chairman, that since the recent change in the tax law where, as I understand it, at the last minute there crept in a provision whose net effect is to discourage people from giving works of art to museums, we have experienced a disastrous decline in the gifts of art in kind. This is not just us. It is art museums across the country. I realize the whole charitable sector in general is hurting because this has to do with appreciated property and the way in which it figures in the calculation of the alternative minimum tax.

But in the case of art museums the objects are our lifeblood, and they are not necessarily fungible. If the donor decides to give you money instead, with perhaps some of the proceeds they realized by selling their art, we cannot go out in the market and necessarily buy anything equivalent to what they could have just given us.

And so, it has been fascinating to watch a process which is billed as punishing the overprivileged and, in fact, who gets punished are the people of the United States because the art donor then has little choice, with these extraordinary values of works of art now, but to put it up at auction, and at auction there is no control as to who the buyer will be. Likely as not the buyer will not be American, and these objects are leaving the country at a great rate. And the alternative would have been for the works of art to come to the American people in art museums across the country.

So, to answer your question, yes, in the field of the gifts of works of art in kind, almost all of which have appreciated in value over the years, some of them enormously, we are hurting.

Senator Reid. We will have to send a copy of this transcript to Chairman Rostenkowski and Chairman Bentsen. [Laughter.]

Mr. Brown. Any help you can give us, Mr. Chairman, would be very gratefully received.

Senator Reid. It is my understanding—well, I guess I have to help myself to a little editorial comment. You know, the reasons these laws are changed in that effect is that the IRS and money writing committees think that people are going to continue donating at the same rate they were before. And just, for lack of a better word, common sense dictates that they are not going to do it. They have to do it for financial reasons rather than——

Mr. Brown. It is interesting because it is common sense and it is human nature. And what people lose sight of is that these people are still giving things away. Nobody is making money out of giving art to art museums. It still is a net asset loss to them, but at very minimal cost.

I understand that when the Senate's own Finance Committee last October recommended that this mistake in the last tax law be changed, the Department of the Treasury costed out what the net loss of revenue would be next year as a result, and came up with a figure of $11 million. Now, if you trade that against the billions of dollars worth of art that would otherwise come to the Nation in perpetuity, it seems like a false economy to me.

Senator Reid. I'm sure the $11 million was an exaggerated figure.

FACILITIES EXPANSION

It is my understanding, Mr. Brown, that your growing collection and associated management responsibilities have caused the board to consider expanding the facilities of the National Gallery of Art. Is that true?

Mr. Brown. This is true, and I do not want to get out ahead of the board because we will have an opportunity to give our first full report to them at their next meeting, which is in a couple of weeks.

But, yes, Mr. Chairman, we have been studying this question, and have retained the services of the original architect of the East Building, the Pei firm, which is now called Pei, Cobb, Freed & Partners, to study what solutions might possibly help this extraordinary space crunch that we are in because the East Building was planned back in the 1960's. We tried to foresee, as much as possible, what the needs would be, but there was only so much you could put on that site. And in fact now, a generation later virtually, we are in a bind.

The basic concept I can give you as a miniature preview is that we want to maximize the art exhibition capability of the gallery, particularly in its principal exhibiting building, which is the famous West Building, which is our largest building and was built for that.

Unfortunately, what has happened in the meantime, the idea of having the staff all taken care of by the East Building and the art shown in both buildings, but primarily the West, has been abrogated by our need to steal space from the West Building to take care of our day-to-day needs for staff and for storage of works of art and so forth.

And so, the idea would be to build a very inconspicuous addition below grade around the East Building on two sides that would help take this pressure off. And it would have enormous advantages in terms not only of art exhibition, but to help our public education role and to make more efficient our office use and give room for our library and for conservation of works of art and for storage of all kinds.

Senator Reid. What would happen if this project were not funded in this next bill that we are going to produce?

Mr. Brown. We would not expect to have the whole thing funded. What we would want in order to keep pace with the long-range project would be to begin with some design money, and that could then keep us on the critical path, as it were. It would be a 6- or 7-year project probably before the space were utilizable, but as President Kennedy reminded us, a journey of 1,000 miles begins with but a single step.

Senator **Reid**. We would ask that if the board approves this West Building expansion that you give us as much detailed information as you can regarding cost projections. And would you also indicate the basis for these estimates when you provide the submission?

Mr. **Brown**. We would be happy to do so, Mr. Chairman.

Senator **Reid**. Senator McClure?

Senator **McClure**. Thank you very much, Mr. Chairman.

Mr. Brown, it is always a pleasure to have you before this committee. Our contacts have been frequent and enjoyable, and I intend to continue that as long as I possibly can on a professional and a personal basis because it is immensely rewarding.

I want to follow through on a couple of things that Senator Reid has already touched upon. One is in relation to the acquisition of more space.

Are all of the activities at the gallery now conducted in the two buildings?

Mr. **Brown**. Virtually, Senator. We do have now some off-site space for warehousing and for backup for our publication sales operations. We think that that could be augmented for the fulfillment, as it is technically called, of our extension service programs. They do not have to be under the same roof.

Unfortunately, virtually everything else does. The works of art have to be in a uniform climactic—climatic condition.

Senator **McClure**. Maybe both.

Mr. **Brown**. Maybe both. [Laughter.]

We also need for the efficient workings of the staff which is very interrelated on almost any project for them to be within easy access of each other.

Senator **McClure**. Well, certainly there is an operational advantage in having them integrated in one location. You pay a high price for that in terms of the space.

I remember not long ago the Congress of the United States was talking about creating more space at the Capitol Building, and we were going to gain a great deal by going underground around the Capitol Building. When the cost estimates came in somewhat on the order of 10 times as much as equivalent space anywhere else in the city, those estimates got changed and the plans got abandoned.

That is what I'm wondering. What is the tradeoff between operational convenience, efficiency, operational necessity, and the opportunity to have more and perhaps better space at a different location where it could be done at a much lower cost?

Mr. **Brown**. This will all go into our study, Senator, and I think that your experience and advice on this is very valuable.

FUNDRAISING

Senator **McClure**. Second was with respect to fundraising. The chairman asked you a question about fundraising, and you talked about the effects of tax treatment of gifts in kind, but you didn't respond with respect to the level of fundraising, that is, cash which is essential to your operation.

The budget indicates that the gallery's fundraising needs have continued to mature. The emphasis is not only on sustaining the momentum of giving for acquisitions, but also for other areas of need as well.

How have the fundraising activities changed with the maturing needs of the gallery?

Mr. **Brown**. Well, that is a very perceptive point, Senator, because we have had to begin to develop constituencies with fundraising in mind to help take care of specific kinds of projects.

The first is, of course, the acquisition of works of art. We have never gone to the Federal Government for any appropriated funds for that, and we have a Collectors Committee which is national in scope. People come from all over the country and provide funds for the acquisition of works of art, in this case, primarily in the 20th century area.

We have also started a circle of the National Gallery where funds can go for specific acquisitions and also for a variety of other special projects. They have helped with our Center for Advanced Study where again most of the scholarships and the functioning money comes from the private sector. And they have helped with various initiatives in the education fields like films and so forth.

Our major effort in fundraising, however, comes after a directive from the Congress that they hoped we would help our exhibition program along from private donations as part of the mix. And we have a very aggressive and assiduous fundraising capability now for the corporate sector. We have been fighting a lot of trends in the corporate sector which have made it increasingly difficult, in that corporations now are taking many other kinds of responsibilities in social areas very seriously, and with all of the trends in mergers and acquisitions, many of these decisions now are taken by new management, often by decentralized management where you don't get the single decision from a headquarters that used to be so helpful for us.

So, it has become more difficult, but I think that our track record is good, and we are continuing to try to get as much help from the private sector as we can.

SPECIAL EXHIBITION FUNDING

Senator **McClure**. Well, I noticed you mentioned the question of exhibitions. The budget states that:

> In the long term, we believe that it would be fully justifiable for the gallery to have its exhibition program completely supported by Federal appropriations, as are its other day-to-day public educational and art-care undertakings.

Generally, the budget indicates that corporate sponsorship is getting more difficult every year. I read that throughout the document. The summary of special exhibition funding sources indicates the gallery actually expects an increase of non-Federal sources from $5 million in fiscal year 1990 to $7.6 million in fiscal year 1991.

Now, you indicated in your comments just now that you were responding to a congressional directive to increase the non-Federal support, although you said in your statement you continue to believe it ought to be Federal. Am I reading that correctly?

Mr. **Brown**. Absolutely.

Senator **McClure**. All right. Thank you. You are doing what you are told to do, but you don't like it. [Laughter.]

Mr. **Brown**. I would say that in this one-off projection for next year, we do have the Columbus exhibition in mind which has been an opportunity on a kind of matching basis to use the intention of the administration and, from last year's appropriation, of the Congress to help us with that Columbus celebration as a specific target. We have been able to use that in our solicitations from the private sector to say, OK, step up to bat and see if you can help us. That is why the big jump in that one year on the private side.

Senator **McClure**. Well, recognizing that there may be a difference of opinion, although I don't know how marginal or central that may be with respect to policy as directed by Congress in your own view, I will ask this question. The budget also argues that:

> Federal contributions to the gallery's special exhibition programs have a multiplier effect, because other museums in this country often look to the gallery in the first instance to organize major traveling exhibitions.

That is a quotation from your budget presentation.

Doesn't a mixture of private and Federal support have a similar multiplier effect?

Mr. **Brown**. There is no question, Mr. Chairman, and we are very happy to be able to find the activities here in Washington having this salutary effect out across the country. And in many cases, an exhibition which we organize and maybe get private sector support for, for the Washington showing, then becomes available in other cities, and then they use it to fund raise in their own community.

FIFTIETH ANNIVERSARY

Senator **McClure**. You mentioned the Columbus exhibition, an activity with which I'm familiar, and I think it is an exciting thing. As you usually do, you find a few exciting things to titillate our interest and hopefully the donors' as well. And I think the growth of those special exhibitions over the years has been a hallmark of your administration there and I think a very healthy one for the appreciation of the arts throughout the country.

The National Gallery of Art was started when Andrew Mellon first proposed to President Roosevelt that Mr. Mellon would donate the necessary funds to build an institution and his private collection could be used to form the nucleus of its collections.

The West Building of the gallery opened to the general public on March 17, 1941. The East Building was opened on June 1, 1978. So, we will have a 50th anniversary of the West Building next year.

Do you have a special celebration in mind for next year? What have you planned?

Mr. **Brown**. We have a very special celebration.

Senator **McClure**. I anticipated that. [Laughter.]

Mr. **Brown**. And it will take a variety of forms.

We are looking forward to publishing several books in conjunction with this which will be a history of the gallery and which will have, we think, a very helpful effect in that we are doing work on oral history now while we still can, and this will be celebrational.

Senator **McClure**. That really bothers me. When you start talking about events that occurred in my lifetime, then you're talking about oral history while we still have time. [Laughter.]

Mr. **Brown**. We are in the perpetuity business at the National Gallery. [Laughter.]

We also are fundraising specifically for our 50th anniversary birthday present. We are hoping to raise $5 million of private sector support for an acquisition, of which we have now succeeded in obtaining three-quarters, or $3.7 million.

We will have a variety of other events, a musical concert program, and things that will go out from Washington around the country.

And then on the 17th of March, we are planning an exhibition which will be a new kind of exhibition in that it is for keeps. The objects will be on loan, but nothing will be allowed into it that isn't earmarked to come to us eventually.

This has been a very active campaign. It is not a fundraising campaign. It is an art raising campaign. We have been very hobbled by the tax law, as I mentioned, but we have found public spirited citizens who are willing to think at least long term of providing things for the national heritage.

And that should be a very festive event. You will all be invited.

CURATOR OF PHOTOGRAPHY

Senator **McClure**. The gallery's photography collection is currently valued at $100 million. Recent donations of portraits of Georgia O'Keefe, Ansel Adams, and The Graphic Studio have expanded the collection. In addition, the gallery has been promised donations in the future by Paul Strand and another recent anonymous offer of a collection valued at over $10 million.

Currently there is no one on the staff of the Department of Graphic Arts who has any expertise in photography. To address this problem, the gallery has requested additional funds in fiscal year 1991 to hire a curator of photography.

Is one curator adequate to handle this increasing workload?

Mr. **Brown**. Well, this is a good question. The short answer is no. But when we agonized over what positions we could ask first the Office of Management and Budget and then the Congress to help fund next year——

Senator **Reid**. Don't include those in the same breath. [Laughter.]

Mr. **Brown**. We felt that in our in-house review we had to make certain priorities, and that if we got one person for photography, we were already way ahead. And so, our long-term hope is to add a backstop for that person, but we think we can get along with one. We have someone in mind who worked with us on our temporary show on the history of photography and who is extremely gifted.

PHOTOGRAPHY CONSERVATION

Senator **McClure**. Well, there is a great deal that needs to be done in terms of preservation of works, and certainly photography is not an area that is immune from that generalized requirement for a rather specialized effort, whether it is you or the Library of Congress or others who try to preserve those kinds of works of art. I understand there are certain continuing chemical processes that are very difficult to handle. I am concerned, as I know you would be and are, with whether or not you have the facilities to handle the preservation needs, let alone the exposition needs, of this kind of a collection.

Mr. **Brown**. We have taken a good look at that, Senator, and we have a paper conservation laboratory in place whose responsibility photography has been over the years because we got the Stieglitz collection years ago. But at some point, we will have to analyze the extent to which new acquisitions will increase our needs in that area.

Senator **McClure**. But one is all you are asking for this year?

Mr. **Brown**. As a curator.

Senator **McClure**. But on the other side on the storage space and preservation, what do you need?

Mr. **Brown**. Well, these are all separate. For preservation, we have our paper conservation lab at the moment.

As to storage space, we have analyzed and measured running feet and so forth, and we are OK for now. But one of the things being cranked into the space study that I mentioned is the housing of our whole collection of works of art on paper because what has happened to us since the East Building was built is that the rate at which works of art on paper from the 20th century have come in has meant that we have outgrown the space allocated to our graphics, including photography, in the East Building. And we have had to usurp space back in the West Building, particularly in view of the scale on which some of these works are done.

I would invite you in May to our Jasper Johns drawing show which shows that modern artists do drawings sometimes 5 feet across. And it is wonderful to be given them, but you have to find someplace to put them.

EXTENSION PROGRAMS

Senator **McClure**. I have just a couple of other questions, Mr. Chairman.

The Department of Extension Programs develops, produces, and circulates color slide programs, films and videotapes to nationwide audiences based upon the gallery's collections and exhibitions. Extension programs are used in schools, libraries, and other civic organizations and by public education television stations and networks throughout the country. It is a program that I very highly commend and support because it is an outreach service for all the rest of the people in the United States who cannot come here, and it is also a way of widening the exhibition of works that are not on permanent public display.

Borrower reports from the Department of Extension Programs indicate that the viewing audience dropped from 90 million in fiscal year 1988 to 80 million in fiscal year 1989. The number of showings also dropped from 177,000 in fiscal year 1988 to 165,000 in fiscal year 1989.

Is there a particular reason for the dropoff?

Mr. BROWN. I think the reason basically, Senator, is in the mix, that the dropoff was almost exclusively in television use. And this was the result of a couple of our users dropping their demands. USIA seems to have not continued the Worldnet which was using our materials, and the learning channel, the ACSN, has been using our programs less frequently than before because they have seen a lot of them. So, part of that is the need to continue to produce new material, and that is one reason we do come to the Congress for help in that area.

The other aspect is that we have, in fact, increased in certain other areas, one of them being the affiliate loans, which is a way of decentralizing our lending. Some of those don't show up in these statistics, but we count for one loan something which then goes and is circulated by a regional audiovisual center or something and does reach a lot of people.

Senator MCCLURE. Is there a way of bringing that statistic back in so we can measure——

Mr. BROWN. I think it would be very interesting to try, and I think that we should give that a whirl.

Senator MCCLURE. I am concerned if, indeed, it is dropping off because, as I said earlier, I think that it is a very valuable program and I hate to see its reach being constrained. It seems to me it ought to be moving in the other direction if, indeed, we are the kind of society we claim to be and hope to be.

Mr. BROWN. Well, we are very proud at the degree of that reach. We still reach all 50 States, some 4,000 communities, and as I speak around the country, often I bring with me a list of the communities that we serve with our extension program, and these small towns in America are very affecting when you hear them read as a litany because we really are reaching into the grassroots of this country.

Senator MCCLURE. Well, before I got involved in politics, I was a member of the Kiwanis Club in my hometown. And as is true of every Kiwanis Club member, he is periodically a program chairman. And I wonder how many Kiwanis Clubs and Rotary Clubs and others across this Nation are aware of the fact that program material is available to them and if they might not respond if, indeed, they knew.

Mr. BROWN. It is a nice idea. I'll follow up.

VISITOR ATTENDANCE

Senator MCCLURE. The fiscal year 1990 justification estimated that annual visitor attendance in fiscal year 1989 would total 7.2 million. The fiscal year 1991 justification indicates that the actual number of visitors turned out to be 6.2 million, not 7.2 million.

The exhibition schedule seemed to be more diverse than in previous years. Do you agree with that? And if it was more diverse, what contributed to the decrease?

Mr. BROWN. Well, I think, yes, it was by some definitions more diverse if you recognize that our biggest effort was this extraordinary Japan festival which brought us 500 years of Japanese art and in addition we built a tea house and had an introduction of the tea ceremony and the Nō drama.

This is a foreign culture to many Americans, and, therefore, people do not flock to have their previous knowledge and tastes reconfirmed. They are coming to learn about a country which has become rather important in our own lives.

But I don't think the statistics are primarily a result of the mix of shows. I think they have to do with something you may be hearing from our good friends and colleagues here in this room, the Park Service. As you may have read in the Washington Post very recently, visitation across the board in Washington has been down 15 or 17 percent. The fact that our projections were some 13 percent high I think simply did not take that general condition into consideration.

Senator McCLURE. Thank you very much.

Thank you very much, Mr. Chairman.

Senator REID. Senator Bumpers?

Senator BUMPERS. I have no questions, Mr. Chairman.

Senator REID. Mr. Cochran?

Senator COCHRAN. I have no questions, Mr. Chairman.

Senator REID. Thank you very much.

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

STATEMENT OF JAMES M. RIDENOUR, DIRECTOR

ACCOMPANIED BY:

HERBERT S. CABLES, JR., DEPUTY DIRECTOR
C. BRUCE SHEAFFER, COMPTROLLER
JERRY L. ROGERS, ASSOCIATE DIRECTOR, CULTURAL RESOURCES
L. LORRAINE MINTZMYER, ROCKY MOUNTAIN REGION, DENVER
ROBERT BAKER, SOUTHEAST REGION, ATLANTA
JOHN E. COOK, SOUTHWEST REGION, SANTA FE
CHARLES H. ODEGAARD, PACIFIC NORTHWEST REGION, SEATTLE
Q. BOYD EVISON, ALASKA REGION, ANCHORAGE
WILLIS KRIZ, CHIEF, LAND RESOURCES DIVISION, WASHINGTON, DC
LEE DAVIS, CHIEF, CONCESSIONS DIVISION, WASHINGTON, DC

BUDGET REQUEST

Senator REID. We are now going to be turning to the Park Service. The fiscal year 1991 appropriation request for the National Park Service totals $1,032,663,000, which is down almost $50 million from the fiscal year 1990 adjusted appropriation. This is a reduction of approximately 5 percent below the current level. The budget proposal, however, does include an increase of 354 full-time equivalent employees.

The net decrease of this approximately $50 million reflects a sharp reduction of nearly 50 percent in the "Construction" account with other offsetting increases and decreases of smaller magnitudes. Specifically, the "Construction" account is proposed at $99,766,000, or $97,641,000 below the fiscal year 1990 adjusted appropriation.

Funds requested for the "Operation of the National Park System" account are requested in the amount of $830,804,000, which is $63 million or 8 percent above the adjusted fiscal year 1990 appropriation. The "Land acquisition" account is proposed at $80,153,000 for 1991, which is $7,349,000 below the current level. Within this account, there is no appropriation request for State grants, which are funded at $19,762,000.

For the first time in 9 years, the administration is requesting funds for the historic preservation fund. The request for this account is $33,665,000, which represents an increase of $1,357,000 above the current level. Within this account, $4,800,000 is proposed for the National Trust. State grants are included at $28,865,000, or 8 percent above the 1990 allowance for these 50-50 matching grants.

Last, the request for the "National recreation and preservation" account is $10,125,000. This is a decrease of $5,798,000, or 37 percent.

PREPARED STATEMENT

We welcome you, Mr. Ridenour, before the subcommittee. We have your prepared statement that you have previously submitted. It will be introduced into the record in its entirety. We would like you to introduce any supporting witnesses who are with you today, including Regional Directors, and then summarize your prepared remarks.

Prior to that, Senator McClure, do you have a statement?

Senator McClure. I have no statement.

Senator Reid. If you would then briefly summarize your prepared statements and introduce your associates, then we will proceed to questions.

[The statement follows:]

STATEMENT OF JAMES M. RIDENOUR

Mr. Chairman and Members of the subcommittee, it is my pleasure to appear before this subcommittee to discuss the fiscal year 1991 budget request for the National Park Service. I know that this subcommittee is as concerned about our national parks as is the Service, and I look forward to addressing whatever questions and concerns you may have.

OVERVIEW

With your permission, I would now like to summarize our fiscal year 1991 budget request. Our total request is $1,076,446,000, and represents the first request ever by the National Park Service to exceed $1.0 billion. Two major initiatives are included in this request--the President's "America the Beautiful" program and Secretary Lujan's "Legacy 99" program.

The budget proposes $156 million for the National Park Service component of the President's "America the Beautiful" program. These funds, appropriated to a proposed new account, will increase preservation of park resources, initiate new research into better ways to protect these resources, upgrade recreational opportunities, and provide for an increased acquisition program for needed park lands. This request represents a $34 million increase over funding for similar programs in 1990.

Also included in the 1991 request is $364 million for Secretary Lujan's "Legacy 99" program, which will provide an increase of $49 million over similar activities in 1990. The "Legacy 99" program represents a major infrastructure program for repairing and rehabilitating facilities in park areas that will continue through the 150th anniversary of the Department in 1999 and leave a legacy to the Nation as it enters the 21st Century. The "Legacy 99" program is designed to compliment the President's "America the Beautiful" program.

The highlights of the budget of the National Park Service, by appropriation, are:

Operation of the National Park System

The request for the "Operation of the National Park System" appropriation is $830.8 million, an increase of $63 million above the 1990 appropriated post-sequestration level.

Major increases are proposed in a number of program areas, including an increase of $9.0 million under the "America the Beautiful" program that parallels my personal interest in enhancing the science and research capabilities of the Service. This increase will provide an additional $936,000 for the expansion of our program of park-based geographic information systems; $2.5 million more for the Natural Resources Preservation program that will allow for 10 new projects annually and continue our aircraft overflight studies; an additional $3.9 million for our Regionally based science and research programs with emphasis on the many research needs facing Alaska parks; over $700,000 more for our Water Resources program, including the inauguration of a two-phased inventory and evaluation program for 100 park areas with significant water resource values; and $1 million for general management planning for the 1,500 acre Presidio.

An additional $31.1 million is proposed under the "Legacy 99" program to strengthen the infrastructure of the National Park System. Programs that will benefit from the Secretary's initiative are park maintenance and hazardous waste mitigation. For 1991, the Service is requesting $15.5 million for operational maintenance increases in specific parks; $8.4 million for Regional maintenance programs which will help to attack the backlog of repair and rehabilitation needs throughout the System; and $7.2 million for a new hazardous material removal initiative that will target important areas which require immediate attention; underground storage tanks inspection and replacement; Servicewide site investigations; and several currently identified problem areas such as those that exist at Padre Island National Seashore and Nuclear Lake on the Appalachian Trail.

An additional $18.8 million is requested to strengthen the operating budgets of specific parks, including $4.7 million for 13 new parks, $6.3 million for 26 expanding or developing parks, and $7.8 million for 99 parks which have experienced a significant erosion of their purchasing power. A part of these park operational increases are included in the totals of two other initiatives. The park operations increases include $11.2 million from "Legacy 99" and $2.6 million from an excellence in education initiative.

Increased funds are also requested for various special initiatives, including: $500,000 for our Volunteers-in-Parks program that will allow an additional 10,000 volunteers throughout the country an opportunity to contribute their time and talents to our parks; $311,000 for the Take Pride in America program to increase public awareness of the need for sound resource conservation practices on a personal, volunteer level; $500,000 for a women and minorities initiative in an effort to tap into and develop the talents and skills that women and minorities can contribute to our programs; and $3.9 million for the excellence in education initiative that includes $2.6 million going to specific park interpretive programs, $800,000 to develop an environmental education and outreach campaign, and $500,000 that will support activities to commemorate the quincentennial of the first voyage of Christopher Columbus.

The Service is proud to be able to continue to do its part in continuing the war on drugs by proposing an ambitious $6.4 million program for 1991. Funds requested include $377,000 that will increase our capabilities to combat drug-related activities at Gateway National Recreation Area in New York, Golden Gate National Recreation Area in San Francisco, and the Nation's Capital; an increase of $2.9 million to purchase a new, twin-engine helicopter; $1 million for increased drug interdiction operations in National Park System units in all 10 Regions; and $2.1 million to inaugurate an Incident Reporting System that will meet the requirements of the Uniform Federal Crime Reporting Act.

As part of an Administrationwide effort, an increase of $3.0 million is proposed develop and implement an integrated inventory and monitoring program on global climate change using parks as natural "laboratories" to detect changes and impacts on biotic systems and their genetic resources. We are also cooperating in another national effort--wetlands protection--by proposing to begin a program to inventory, assess and monitor our wetland areas as part of our $700,000 water quality study increase request.

The Service is also requesting $1.9 million to correct internal control program weaknesses in property management and artifact storage. In fact, the $1.6 million for improvement of artifact storage, when combined with the $2.5 million requested for object cataloging, would provide the Service with an annual museum collections management program in excess of $4 million. This would enable the Service to properly catalog the object backlog by the year 2000 and, additionally, address the storage, environmental control, security and fire protection deficiencies identified in a 1986 museum collections management plan.

National Recreation and Preservation

The 1991 request for the "National Recreation and Preservation" appropriation is $10.1 million, a reduction of $5.8 million below the post-sequestration level for FY 1990. Funding for Rivers and Trails Conservation programs--State and Local Conservation Technical Assistance, the Rails-to-Trails program, Trails and Rivers Inventory and the National Trails System program--will not continue, and funding is reduced for various external historic and cultural resource protection projects and for the Recreation Data Collection and Surplus Property programs in order to concentrate our resources on the operation of the National Park System.

Construction

The 1991 request for "Construction" is $99.8 million. Although this is a decrease of $97.6 million from the 1990 post-sequestration level, it represents the largest construction request made by the Service since 1983. The request is made up of two major components: $45.4 million in the "America the Beautiful" program and $54.4 million in the "Legacy 99" program. The projects to be funded will rehabilitate park infrastructure, improve dam safety, reduce hazardous materials, protect resources, and provide recreation opportunities for park visitors. The "America the Beautiful" component includes $7.5 million to begin modification of water control structures to restore natural hydrological conditions in Everglades National Park. Special emphasis will continue to be placed on construction and rehabilitation of employee housing by earmarking $14.7 million for this purpose.

Land Acquisition

As part of the "America the Beautiful" program, a total of $80.2 million is requested for the "Land Acquisition" appropriation. Lands will be acquired at 10 locations to preserve resources and to enhance recreation opportunities, including $14.5 million to conclude the land acquisition plan at Channel Islands National Park, $11.6 million to continue the program at Santa Monica Mountains National Recreation Area and $7.5 million to begin the purchase of acreage important to maintaining natural hydrologic conditions at Everglades National Park. The request includes funds to administer prior-year State outdoor recreation grants, but does not request additional grant funding in order to focus resources on addressing the large backlog of authorized Federal land acquisition.

Historic Preservation Fund

The budget request of $33.7 million includes a request of $28.9 million for Historic Preservation Fund grants to States and Indian Tribes and $4.8 million to the National Trust for Historic Preservation. This is an increase of $2.4 million above what these programs will receive in 1990. This is the first budget request since 1982 for these programs.

John F. Kennedy Center for the Performing Arts

The 1991 request to support the operations and garage repairs at the John F. Kennedy Center for the Performing Arts is $8.1 million. Funding requested for the second year of a 3 year garage repair project is $3 million. This amount is consistent with the construction schedule for repair of the garage.

Mr. Chairman, that concludes my prepared remarks. My associates and I will be pleased to answer any questions you or other Members of the subcommittee may have.

Mr. **Ridenour**. Yes, sir; with me at the table is Herb Cables, Deputy Director, and Bruce Sheaffer, our Comptroller. Our Regional Directors are here around the room, and I would introduce them at the time when there might be a question for that region, as well as our Associate Directors.

So, I will begin.

Our total request is $1,076,446,000, and it represents the first request ever by the National Park Service to exceed $1 billion. I would make a point that that is not the first Park Service budget that would exceed $1 billion, but it is the first time we have ever requested $1 billion. So, there is a difference.

The two major themes in the program this year are the President's America the Beautiful Program and Secretary Lujan's Legacy 99 Program.

The budget proposes $156.6 million for its component of the President's America the Beautiful Program. This request represents approximately a $34.3 million increase over funding for similar programs in 1990.

Also included in the 1991 request is $364.2 million for Secretary Lujan's Legacy 99 Program which will provide an increase of $49 million over similar activities in 1990. Secretary Lujan's program is a major infrastructure program that is geared at trying to eliminate the backlog that we have all heard about for so many years, for example, in the GAO listing. It is geared to eliminate that backlog or take a major whack at it and hopefully eliminate it by the year 1999. And that is why the program is entitled Legacy 99.

OPERATION OF THE NATIONAL PARK SYSTEM

In the operations category, we are requesting $830.8 million, an increase of $63 million above the 1990 appropriated postsequestration level. And, of course, this is our major operating account which is extremely important to us.

Major increases are proposed in a number of program areas, including an increase of $9 million under the America the Beautiful Program that parallels my personal interest in enhancing the science and research capabilities of the service. This increase will provide an additional $936,000 for the expansion of our program of park-based geographic information systems and $2.5 million more for the natural resources preservation program that will allow for 10 new projects annually and continue our aircraft overflight studies.

There is an additional $3.9 million for our regionally based science and research programs with emphasis on the many research needs facing Alaska parks and over $700,000 more is targeted for our water resources program.

An additional $31.1 million is proposed under the Legacy 99 Program to strengthen the infrastructure of the Park System, and I mentioned that program before.

We have a new initiative of $7.2 million for a new hazardous material removal initiative that will target important areas which require immediate attention, underground storage tank inspection and replacement, servicewide site investigations, and several currently identified problem areas, such as those that exist at Padre

Island National Seashore and Nuclear Lake on the Appalachian Trail.

In addition, $18.8 million is requested to strengthen the operating budget of specific parks, including $4.7 million for 13 new parks, $6.3 million for 26 expanding and developing parks, and $7.8 million for 99 parks which have experienced a significant erosion of their purchasing power.

We have $500,000 for our volunteers-in-parks program that will allow an additional 10,000 volunteers throughout the country an opportunity to contribute their time and talents to our parks; $311,000 for the take pride in America program; $500,000 for a women and minorities initiative in an effort to tap into and develop the talents and skills that women and minorities can contribute to our programs; and $3.9 million for the excellence in education initiative.

We have $800,000 to develop an environmental education and outreach campaign, and $500,000 that will support activities to commemorate the quincentennial of the first voyage of Christopher Columbus.

In the war on drugs, we are proposing an ambitious $6.4 million program for 1991. The funds requested include $377,000 that will increase our capabilities to combat drug-related activities at Gateway National Recreation Area in New York, Golden Gate National Recreation Area in San Francisco, and the Nation's Capital. An increase of $2.9 million is to purchase a new twin-engine helicopter and $1 million is for increased drug interdiction operations in National Park System units in all 10 regions.

An increase of $3 million is proposed to develop and implement an integrated inventory and monitoring program on global climate change using parks as natural laboratories to detect changes and impacts on biotic systems and their genetic resources. Also we have a major wetlands initiative in this budget at the tune of $700,000.

We are also requesting $1.9 million to correct internal control program weaknesses in property management and artifact storage. In fact, the $1.6 million for improvement of artifact storage, when combined with the $2.5 million requested for object cataloging, would provide the service with an annual museum collections management program in excess of $4 million.

NATIONAL RECREATION AND PRESERVATION

The 1991 request for the "National recreation and preservation" account appropriation of $10.1 million is a reduction of $5.8 million below the postsequestration levels for fiscal year 1990. Funding for rivers and trails conservation programs, State and local conservation technical assistance, the rails to trails program, trails and rivers inventory and the national trails system program will not continue, and funding is reduced for various external historic and cultural resource protection projects and for the recreation data collection and surplus property programs in order to concentrate our resources on the operation of the National Park System.

CONSTRUCTION

The construction request is $99.8 million. Although this is a decrease, as you pointed out, Mr. Chairman, of $97.6 million from the 1990 postsequestration level, it represents the largest construction request made by the Service since 1983. This request is made up of two major components: $45.4 million in the America the Beautiful Program and $54.4 million in the Legacy 99 Program.

LAND ACQUISITION

Under land acquisition, a total of $80.2 million is requested for land acquisition. And I have that broken out by property. As we get into a discussion, we can discuss this if you would like.

HISTORIC PRESERVATION FUND

The budget request of $33.7 million includes a request of $28.9 million for historic preservation fund grants to States and Indian tribes and $4.8 million to the National Trust for Historic Preservation.

Senator BUMPERS. Jim, if I may interrupt you. I am reading your statement at that point. You said a budget request is $33.7 million. Did you just now say $28 million?

Mr. RIDENOUR. Did I? It is $28.9 million for the States and Indian tribes.

Senator BUMPERS. I'm sorry. I'm mistaken.

Mr. RIDENOUR. Yes, sir; it's a total of $33.7 million for the fund. Of that $28.9 million for grants, Senator, we are anticipating about $750,000 of that to go directly to tribes.

That fairly well concludes my statement with the exception of the Kennedy Center, and I wonder if we would want to talk about that separately.

Senator REID. We are going to have a lot of questions on the Kennedy Center. So, you have plenty of time for that. [Laughter.]

Mr. RIDENOUR. Maybe the best place to stop would be there then.

Senator REID. Thank you for your statement.

We have, to say the least, a number of questions that we're going to submit to you in writing that we don't feel appropriate and have the time to present to you today. We would ask that you get the answers back within the next couple of weeks.

Mr. RIDENOUR. Yes, sir.

AMERICA THE BEAUTIFUL AND LEGACY 99

Senator REID. This year the National Park Service contains an amendment totaling $156.6 million for an initiative entitled America the Beautiful.

Why does the administration claim that this is a $156.6 million initiative when it represents increases which arguably are little more than the amount provided by Congress in the previous year? In effect, we just have a name on things we have already done in years gone by.

Mr. RIDENOUR. Well, my reaction to that would be that both the America the Beautiful concept and the Legacy 99 concept are concepts that appear in this budget and will appear in budgets subsequent to this. So, in other words, I see it starting out as a track. Either way you look at the dollars, whether you call it the America the Beautiful or whatever you might want to call it, it is still more money than we have had for similar programs in past years. Of the $156 million, it is about a $34 million increase.

Senator REID. I guess we just wanted to make a point here. Simply changing the name or giving something a new name that has always existed anyway does not change anything. Even though you could go around talking about America the Beautiful, the fact is that Congress over the last 8 or 10 years has done a great deal to protect the National Park System in providing money where none has been asked by the administration.

Mr. RIDENOUR. Well, certainly we would want to recognize the efforts and appreciate and applaud the efforts of Congress over the past years. And what I would hope Congress would do would be to look at these two new programs as two new initiatives showing that the administration itself is going a little more on the offense than we have been in the past.

Senator REID. What I want to do—actually I probably should have started with this softball rather than the second question. [Laughter.]

HELICOPTER

Last year the Park Service requested money to purchase a new helicopter and instead of doing that, the subcommittee elected in conference to provide funding to lease a new helicopter.

What are the advantages of purchasing rather than leasing this helicopter we are talking about?

Mr. RIDENOUR. Well, I might turn to Bruce specifically. But between our people and the people at the Office of Management and Budget, they have just crunched the numbers, so to speak, to come up with what the best deal financially would be to make. And I know we have gone through these before in my prior lives, and it always comes out to just a financial crunch. I think they just feel that we are better off financially to buy rather than lease.

Senator REID. Do you agree?

Mr. Sheaffer. Yes; the analysis shows that it is more economical to buy it in the long term than it is to lease it.

Senator REID. Over how long?

Mr. Sheaffer. Over a 10-year period.

SUBSISTENCE HUNTING IN ALASKA

Senator REID. How will the recent State court decision affect your responsibilities related to subsistence hunting in Alaska?

Mr. RIDENOUR. Well, that is a big question, and I don't know anyone who knows the answer right now. We had hoped that the State would move aggressively in some fashion, either through the legislature or through some sort of a mechanism that would take them to their constitution.

We would prefer, obviously, that the State stay in the saddle in terms of these types of activities. But if that is not the case, it will throw us in a different position.

It won't have as much of an effect on us as it would have, for example, on the U.S. Fish and Wildlife Service.

Senator **Reid**. What would the Park Service funding requirement be if the State simply does not continue to manage, as you've indicated they might not, for subsistence hunting in the parks?

Mr. **Ridenour**. I would like to have Boyd Evison, our Regional Director from Alaska answer that.

Mr. **Evison**. That level has not been determined yet. We are working under the leadership of the Fish and Wildlife Service in determining that right now, but there is quite a range depending on the degree to which you assume responsibility and the intensity with which you manage it. There's a median figure for us in the range of $3 million a year.

As the Director has said, we still fervently hope that the State will be able to resolve that issue by July 1, at which time——

Senator **Reid**. Why is that date a magical date?

Mr. **Evison**. That's the time at which the extension or the stay on the decision by the Alaska Supreme Court expires.

Senator **Reid**. If the State agrees, then doesn't there have to be a referendum also?

Mr. **Evison**. If it is to be done by an amendment to the Constitution, there does have to be a referendum, and it is very unlikely that that can be accomplished in time. They are looking at some other possibilities.

Senator **Reid**. I'm sure you are going to have to answer some other questions, but is Jack Capp still up in Alaska? Do you know Jack Capp?

Mr. **Evison**. I don't know him.

Senator **Reid**. You must have too many employees up there. He works for the Park Service.

Mr. **Evison**. I don't think he is.

Senator **Reid**. He was last week. [Laughter.]

Mr. **Evison**. We do have three-fifths the number of employees that Yellowstone National Park does and I can't keep track of all of them.

Senator **Bumpers**. He doesn't even know who is working for him. Don't worry about it. [Laughter.]

Senator **Reid**. But I know who's working for you. [Laughter.]

MAINTENANCE EMPLOYEES

The budget request for the "Operation of the National Park System" account includes a base increase of almost $12 million to support an additional 505 full-time equivalents. Nearly one-half of these additional employees are requested for maintenance activities.

Are these additional maintenance employees necessary to support the Secretary's programs? Or tell us why they are needed.

Mr. **Ridenour**. Well, my understanding in the past relative to FTE's is that the number of FTE's was not accurately being controlled at our level. Essentially what we have done is negotiate with OMB to come up with an accurate number of FTE's. Certainly a number of those that we feel we need would be in the maintenance area.

One of probably the biggest surprises to me, coming from a State park system, which I considered to be a pretty good one, was the level of maintenance that needs to be done within our National Park Service. Quite frankly, it was shocking. At some places we are doing a pretty good job. It is a little bit spotty, but you can go to certain places—it would not embarrass anyone for me to tell you where because they know the problem is there, obviously, because they are living with it every day. Certainly if you go to the Grand Canyon and you walk to the right and look at the canyon, the canyon is a beautiful resource, but if you look to the left and see the kinds of conditions under which we're operating, both in terms of our maintenance facilities, employee housing, and a number of things, you find that things are not so good. And that is true throughout the system. There are exceptions, obviously, here and there. But I would say that maintenance certainly has to be a high priority with us.

Senator REID. What would be the programmatic consequences if Congress does not fund the additional 505 full-time equivalents? Will business continue as usual, and if not, why not?

Mr. RIDENOUR. I would say business would continue at a slightly lower level—yes. To the public, as they go through the gate, they will not generally see the deterioration except in trail situations and things of that nature. It is the behind the scenes situations. It is the taking care of the sewage. It is those things that you don't visibly see when you walk through the gate that really seem to suffer the most.

Senator REID. Does the Park Service expect to fill these 505 new FTE's if the budget is approved as requested?

Mr. RIDENOUR. I think the truth of the matter is—and Bruce, kick me from the side if that isn't the truth. The truth of the matter seems to be that we have many of these filled as of now.

Mr. SHEAFFER. Well, not the increase, Mr. Chairman. The increase requires the additional funds we are requesting in the 1991 budget. And I would say, yes, our intention is to fill those positions. However, there are some unknowns. Although it is a known that if we will have to absorb a large portion of our pay cost in fiscal year 1991 it will have an effect on our ability to fill all the positions we are requesting.

Mr. RIDENOUR. The point that I was making is that we have negotiated our FTE number up so that, in effect, we were higher than what our allowance was previously.

Senator REID. But nothing has changed since you submitted the budget. You knew that at that time.

Mr. RIDENOUR. Actually, no, sir. We knew about 1989 and 1990, but at the time that the parks requested the additional funds and the additional staff in the formulation of the 1991 budget request, we did not know that we would be placed in a position of having to absorb the 1991 pay cost. So, yes, they had already made those adjustments necessary for 1989 and 1990, but not for 1991.

BUDGET BASE REDUCTIONS

Senator REID. How will the Service accomplish the base reductions of $6,108,000 for administrative efficiency and over $3 million for staffing efficiency which are indicated on page 22 of the budget justification?

Mr. **Ridenour**. That base adjustment, Mr. Chairman, I understand, as reflected in, I believe, most of the Department of the Interior budgets, was a result of an analysis done by OMB that is to have the effect of reducing costs by taking certain steps. For example, travel less, fill jobs at a lower grade than they had previously been filled, and lapsing positions at a greater rate.

Senator **Reid**. Won't these reductions, which total over $9 million, largely offset the $11 million requested for the 505 additional staff, the employees which we discussed?

Mr. **Sheaffer**. It will certainly have some effect on that increase, yes. And in combination with pay costs——

Senator **Reid**. I guess you can see from where we are going with these questions that it appears that if these additional positions are necessary to carry out the Secretary's maintenance improvement program, for example, we are not going to be accomplishing that anyway. In other words, doesn't the budget request additional money for program enhancements on the one hand, and then take most of that same money away on the other hand?

In fact, is this anything more than kind of a shell game in which the Park Service is touting its initiatives, such as the ones we have talked about? And, in fact, there is nothing new happening.

Mr. **Sheaffer**. Well, the one thing, Mr. Chairman, that we would like to point out is that these across-the-board cuts, if you will, like pay cost or the effect of this $9 million you mentioned, will affect every park, whereas this $11 million is targeted for specific deficiencies. So, it will clearly affect some parks more than others.

Senator **Reid**. What we are going to do here gentlemen, if it is OK with everyone, we are going to limit the questions, including the chairman, to about 10 minutes. And then we will rotate. And if people have more than 10 minutes of questions, we will go back for a second try.

Senator McClure.

Senator **McClure**. May I defer to Senator Cochran?

Senator **Reid**. Senator Cochran.

NATCHEZ NATIONAL HISTORICAL PARK

Senator **Cochran**. Thank you very much, Mr. Chairman.

Mr. Ridenour, let me first of all thank you for the cooperation that you have given to the people of Mississippi in the establishment of the national historical park at Natchez. We appreciate very much the cooperation and particularly the personal interest that has been shown in this by the Secretary of the Interior. He is coming to Mississippi in early June to participate in dedication ceremonies of this new national park. We are very happy about that, and hope you will convey our comments to the Secretary.

In looking at the operation of that park, which has just newly been created, I noticed that there is a budget inclusion of $350,000 for operation of the park for fiscal year 1991. I am advised that there actually will be necessary expenses of closer to $500,000 required to do all the things that have to be done, to operate Melrose, the antebellum mansion that is part of the park, and to maintain it for the general public. You wouldn't object too much if we appropriated a higher figure, would you, of $500,000 rather than $350,000?

Mr. **Ridenour**. We could probably find some prudent way to use those funds appropriately.

Senator **Cochran**. I also noticed that in the legislation that established the park—the park became a reality, as you know, last year—but there were some studies that were required of the Secretary of the Interior. One was specifically to look at the site of Old Fort Rosalie to determine whether or not it had the historical significance and integrity as a property that would justify its being included as a part of this new historical park.

I wonder if that review of that property has been completed, and if so, what recommendations, if any, the Park Service is making about including that property in the park.

Mr. **Ridenour**. I wonder if I might call on Bob Baker, our Regional Director.

Mr. **Baker**. Senator Cochran, good to see you.

Yes, sir; that study has been completed. Thirty-five parcels have been identified to be included in Fort Rosalie, and we are presently doing an appraisal to find out the exact price of the acquisition.

Senator **Cochran**. Do you have any indication for us as to when we could expect a cost estimate so we would know if we could include that in this bill, how much it would be?

Mr. **Baker**. We have a rough cost estimate right now of $2.5 million, and that is being refined. And I would think that would be within the next month.

Senator **Cochran**. Well, I appreciate that very much.

Senator **Reid**. I wonder if he knows Jack Capp. [Laughter.]

Mr. **Baker**. Yes, sir; he just moved to the region. [Laughter.]

NATCHEZ TRACE PARKWAY

Senator **Cochran**. One other thing. In connection with this new park, there is a provision in the bill that was passed by Congress that requires a study of the feasibility of extending the parkway, the Natchez Trace Parkway, into the downtown Natchez area. I understand that there are three alternate routes that are currently being reviewed for a terminus of the parkway in the downtown area.

I wonder whether or not you can let us know when there will be a final report on this study and whether or not it will be completed in time to have any bill provisions in this year's appropriations bill.

Mr. **Baker**. Yes, sir; Senator, that study has been concluded. We have selected option two. There are a couple of issues that we are dealing with right now. One of them has to do with the State of Mississippi, which would have to acquire some land associated with the right-of-way, and the upgrading of Liberty Road, which is where Natchez Trace would tie into. And there is going to be a substantial upgrading of that road. And so, what we are doing is working with the city of Natchez and the State of Mississippi to determine exactly what the costs are and who is paying.

Senator **Cochran**. Are you going to give us then a specific recommendation for a plan that would include cost sharing between the Federal and the local interests on that project?

Mr. **Baker**. Yes, sir; and that is what we are working on right now.

Senator **Cochran**. Do you have any indication as to a timeframe when that might be complete?

Mr. **Baker**. No; the upgrading of Liberty Road is about $10 million, and the acquisition of the 88 acres is about $4 million. So, there is a substantial amount of money related to the park, and we are trying to work that out right now.

Senator **Cochran**. I noticed that the President's budget contains about $9 million for additional construction of the Natchez Trace Parkway itself. I assume that is for a segment up in Tennessee that would be with the national area. Is that right?

Mr. **Baker**. That is right. That is where activities are going on right now.

Senator **Cochran**. So, there's no appropriation requested in this year's budget for the Natchez of the segment of the parkway into the downtown area.

Mr. **Baker**. That is correct, sir.

Senator **Cochran**. Well, again, let me just say that we appreciate your cooperation in working with local interests, with the State, and working with the city of Natchez. A tremendous investment has been made locally into this new project, and I think it is going to be a wonderful new asset for the National Park Service and our State and an investment well made.

We also, as a matter of fact, are in the process of introducing legislation that will authorize the donation of a new property in this park that will serve as a living black history exhibit. It is a property that was owned by one of the most notable and successful black freed men in our State and probably in the United States. The house is going to be a very fine addition to this park. That is the William Johnson House, and there is legislation that Senator Lott and I have introduced here and Congressman Parker on the other side of the Capitol. More about that later on.

But thank you again for your help on this.

Senator **Reid**. Anything else, Senator Cochran?

Senator **Cochran**. No; thank you, Mr. Chairman.

Senator **Reid**. Senator Bumpers.

HOT SPRINGS NATIONAL PARK

Senator **Bumpers**. Mr. Ridenour, first of all, it took us a long time to get the money and really over the initial objection of the Park Service, but your predecessor finally came around to helping me get the money to redo the Fordyce Bath House in Hot Springs, and you were very kind to come down there to help us dedicate it. Do you know what the visitations are at that bath house?

Mr. **Ridenour**. Not at the top of my head.

Senator **Bumpers**. It is running 2,000 a day. I consider that a fabulous success. I publicly express appreciation both to you and your predecessor Bill Mott who was a tremendous help to us in that.

SANTA MONICA NATIONAL RECREATION AREA

In this acquisition fund, you have $11.6 million for the Santa Monica National Recreation Area. Can you tell me what you plan to do with that money, what tract you plan to buy?

Mr. RIDENOUR. I do not think that is specifically identified for any tract, Mr. Chairman. I think that is just an ongoing process of being able to purchase what becomes available within the original plan.

Senator BUMPERS. Are you trying to work out any kind of grants and donations of any of that land as well as easements? I know you are working on easements all the time in that area.

Mr. RIDENOUR. We are looking at any kind of deal we can find in that area.

Senator BUMPERS. How about Bob Hope's land? Are you trying to work with him on anything?

Mr. RIDENOUR. That is one that is highly controversial, obviously. It has made a lot of press nationally. Mr. Hope himself has been quoted extensively in the press. Certainly the area that he is involved in there is a high-priority area. It is a very nice area.

There are additional areas up on top, called the China Flats area, that are also extremely valuable and of great interest to us.

Our position at this point is that we feel very strongly that the local government should take its action and not be led by our action. They have zoning questions before them. They have questions on environmental impact. They have a number of questions before them as a local government. We would very much like to have them take their position from which we could take our lead relative to those particular properties.

Senator McCLURE. Dale, would you yield on that question?

Senator BUMPERS. I would be happy to.

Senator McCLURE. The reason I asked you to do that—and I apologize—is that I have been very concerned for many years that the local government does not seem to be supportive of the actions that we are taking here at the Federal level. That does bother me. It has bothered me for years that if, indeed, the local governments want us to take these actions, they should at least be taking actions to support the Federal program. But I have not seen them do that. Consistently they have refused and failed to do that over the years.

Senator BUMPERS. Mr. Chairman, that is a very unique area and probably there is not anything in the Park Service even remotely similar to the arrangement there and what we are trying to do. I think the total system is about 157,000 acres, and we own maybe? Twelve thousand or thirteen thousand acres so far?

Mr. RIDENOUR. That's approximately right.

Senator BUMPERS. And for this $13 million, Jim, as you know, we will be lucky to get 100 acres, 200 acres. I don't know what. It depends on what they pick. That is the reason I was curious. It is a very expensive proposition.

I am interested in it because despite whatever foot-dragging there may be on the part of the local government, I still think that a lot of that area is worth saving. I am a strong proponent of that system there even though originally I must confess to you I was not terribly enthusiastic about it.

Senator **McClure**. Isn't it fair also to say that if we had more support from local government, the cost of acquisition would be lower?

Senator **Bumpers**. Well, that is very possible. And from that standpoint, your point is well taken. We ought to really insist on more cooperation from the local governments and make sure they do not impede us and cost us more money.

Mr. **Ridenour**. I think with the money that we are specifically looking at this year, the primary thing will be to complete the missing links of the backbone trail and to connect the trail with the Federal- and State-owned components that we presently have.

Senator **Bumpers**. That is fine. I have walked over that whole area there, and you couldn't find a better use for this money. That suits me fine.

ROCKY MOUNTAIN NATIONAL PARK

How about Rocky Mountain National Park? Any money in there for acquisition?

Mr. **Ridenour**. No; there is nothing on Rocky Mountain.

Senator **Bumpers**. Well, there is a problem. That is one of those places where we have people who are living on the boundaries of the park complaining about the visitors in the park making too much noise. [Laughter.]

And that is a place where we let things sort of get away from us. I know I am sort of preaching Jim McClure's sermon. We cannot buy all the land we would like to have, but there are some areas in the Rocky Mountain National Park which your Director and your Regional Director will tell you that really need desperately to be saved. I regret very much that there is no money in the budget for acquisitions in that park. And there again, that land is very expensive. It does not compare with Santa Monica, but a lot of it is certainly worth saving, and I will look at that before we go to markup on this bill and see if we might find some money for that purpose.

BATTLEFIELDS

Now, how about battlefields? Any money in acquisition for Antietam, for example?

Mr. **Ridenour**. Nothing in the battlefields area in our list up to the $80 million.

Senator **Bumpers**. Jim, let me tell you. There are two or three bills floating around here requiring the Park Service to do a national survey of our battlefields. I am not a cosponsor. I do not like any of them as well as I would like one of my own. I may have to introduce my own.

But here is our problem with the battlefields. There is a tremendous heightened interest in Civil War battlefields in this country. Maybe the Third Battle of Manassas prompted that. I would like to think so. But I think it is very important that the most significant event in the history of this country and a lot of the history of it is about to get away from us.

And we do, indeed, need a national study maybe by some prestigious group to be appointed by the President—I am talking about academicians and scholars and just Civil War buffs and so on—to tell us which battlefields are the most important from a historical standpoint, which ones are the most threatened, which lands in each one of those are the most threatened, and do some sort of a priority setting for us. Now, naturally we each want to have our own favorite battlefield, and we each want to have our several battlefields. And some people would consider something threatened that I might not, and I might consider something threatened, but we need to get together on that and have some kind of a national study.

Well, staff tells me now that Antietam, for example, is No. 8 on the Park Service list in order of priority? Is that correct? Is Ed Bearss here? [Laughter.]

How about Will?

Mr. RIDENOUR. Will Kriz?

Mr. KRIZ. What was the question, sir? Are you talking about acquisition within the existing boundaries or are you talking about the——

Senator BUMPERS. No; I'm looking at a list here that says land and water conservation land acquisition projects by agency and by OMB rank. It is my understanding the Park Service ranks Antietam No. 8, and OMB ranked it 148.

Senator REID. Close. [Laughter.]

Senator BUMPERS. Now, you think about OMB running this show and telling us 148 in what is obviously one of the most significant—certainly I think the Park Service's No. 8 may be too high. That is where more men were killed in 24 hours than in all the wars we had been involved in previously to that time, and they rank it 148 in priority.

Are you familiar with this?

Mr. KRIZ. I am familiar with the priority ranking system and the number. The system is based on numbers assigned to various kinds of factors such as the threat to the land, the facilities——

Senator REID. Would the Senator yield, Senator Bumpers?

Senator BUMPERS. I would be happy to yield.

Senator REID. I would ask that you handle things for a little while. I have to go. Senator Nunn is going to repay me for Georgia losing to UNLV. [Laughter.]

Senator BUMPERS. There is a lot more press in that than there is in this battlefield. [Laughter.]

NATIONAL STUDY OF BATTLEFIELDS

Mr. RIDENOUR. Senator, if I might just respond to your thought about there needing to be a national study. Almost fortuitously, this was a discussion between myself and the chief of staff of the Secretary this morning. As you know, I testified basically in opposition to the 10 battlefields in Virginia that we talked about the other day in your hearing, primarily because there were so many that we felt needed to be looked at. And the Secretary has asked me as of this morning to try to begin to put some sort of a strategy together as to how we might best begin to take a broader look at these battlefields across the country, and I have charged Jerry Rogers and Ed Bearss to begin to come up with a strategy for how we might do that.

Senator **Bumpers** [presiding]. Well, we must do that, Jim, because we are doing this on an ad hoc basis according to each individual Senator's whim as to what is important and what is not in these battlefields. I have my own list, but I am willing to forego that in order to get some sort of system and order into this thing. Then we will need to pour a lot of money into it.

The Shenandoah campaigns are all going to be lost to us. Brandy Station is about to be totally developed, and that was a very important battle. We have those things all over the western part of the Civil War battlefield and Mississippi, Alabama, and Georgia.

TOTAL BUDGET REQUEST

How much did you ask for before OMB got their claws on this budget, not this, but your total budget?

Mr. **Ridenour**. On land acquisition?

Senator **Bumpers**. Everything.

Mr. **Ridenour**. Total budget.

Senator **Bumpers**. You have $1 billion some million here. What was it before OMB got a hold of it?

Mr. **Sheaffer**. Well, Senator, it is going to be a little confusing because, in fact, some of these programs took shape after we made the request. Our request to the Department was slightly over $1 billion, which is just about what our request to you is. But the components are quite different.

Senator **Bumpers**. You are telling me the totals came out about the same, but the priorities were different?

Mr. **Sheaffer**. Yes, sir; the components are quite different.

Senator **Bumpers**. That just irritates the hell out of me. I mean, it irritates me that OMB is establishing the priorities and they are setting the priorities and not you and the people who have to deal with these problems every day.

BATTLEFIELDS

Mr. **Ridenour**. One other point that I would add to your comment about the need for us to look at these battlefields generally, is that I find all kinds of interests are coming together around supposed battlefield conditions in some cases. In other words, they are trying to make a super zoning agency in their own local communities based on the historical knowledge that we might have. In some cases I think that's perfectly legitimate. But I think the point that you make—at least what I'm hearing you say—is that if we had a good, comprehensive study with some sort of priority for those places with the most critical significance, then we would not get drawn into each of these little zoning battles where someone has gone and speculated on a couple of hundred acres and hoped we would say there was something very critical there in order to make a few bucks on the deal.

Senator **Bumpers**. You know, people like Jim McPherson and Bruce Catton and those people would be honored to serve on a commission like this. I want us to get a bill through here to establish such a commission so that my subcommittee and this subcommittee can start dealing with this in a historical, orderly manner.

CHURCH UNIVERSAL AND TRIUMPHANT

Now, let me change gears here just a moment and ask you about the Church Universal and Triumphant just north of Yellowstone.

Mr. **Ridenour**. Yes, sir.

Senator **Bumpers**. Do you have a report on how significant the oilspill is there?

Mr. **Ridenour**. I would call on Lorraine.

Ms. **Mintzmyer**. We do not have an accurate report from the State as to the assessment of the damage. We have responded in testimony and hearings about our concerns that the church has gone ahead and developed a bomb shelter. We have made it known to the State that there should be an environmental impact statement on the whole development. The church said it would make certain that there was a complete assessment before doing any developing. Our response in the hearings points out that a bomb shelter is not a temporary structure.

Senator **Bumpers**. Lorraine, while you are on your feet, let me ask you another question about that church and their land ownership. Are they still building fences, incidentally, between the Yellowstone River and——

Ms. **Mintzmyer**. They are still building fences, yes.

Senator **Bumpers**. What impact has that had so far on elk and moose and deer's ability to graze that area in the wintertime?

Ms. **Mintzmyer**. We are concerned about the migration of the animal populations. It does impede those migrations. We have testified to that fact in hearings with the States.

Senator **Bumpers**. Well, that's a separate subject, Mr. Director. That really concerns me. I think you were with me when we drove through that area. Bob Barbee was. They bought what? Thirty thousand plus acres there?

Ms. **Mintzmyer**. Right in the canyon, yes.

Senator **Bumpers**. It goes right up against the park.

Ms. **Mintzmyer**. It does, indeed.

Senator **Bumpers**. With all the fencing going on there, there is no place for the grazing animals like moose and elk. When they go down there in the wintertime, they can shoot them, can't they, under Montana law if they consider them to be a pest?

Ms. **Mintzmyer**. If they are outside the park area, they are subject to the State game laws, yes.

Senator **Bumpers**. That is true of bison in particular, isn't it?

Ms. **Mintzmyer**. It is.

Senator **Bumpers**. Lorraine, have you recommended to the Director or has the Park Service considered doing anything about that?

I guess these people are operating within their rights. I am not criticizing anybody's religion or them even owning the land, but it is having in my opinion a devastating effect on the park and it is going to continue.

Ms. **Mintzmyer**. I think we are doing what we think we can legally do at this point because it is private land and private property, and it is subject to the laws of the State of Montana. And we as the neighbor are responding in all the hearings and our environmental analyses about the impacts. But that is all that we're legally empowered to do at this point, Senator. We are concerned.

Mr. Ridenour. I might add that I think one of the interesting things is, just in the short year that I have been in this job, which is 1 year 2 days ago——

Senator Bumpers. Four hours and twenty-seven minutes. [Laughter.]

Mr. Ridenour. In the short time that I have been here, some of the attitudes of people from the State of Montana have begun to show some shifts in terms of taking a closer look at some of the activities proposed by the church. Where a short year ago, many people might have seen this as an economic opportunity, a boon to the area and so forth, some of their latest actions have caused the State to search within itself in terms of just how much of a good thing they have going there. So, I am encouraged that the State is beginning to look more carefully at these things.

Senator Bumpers. That could be very helpful.

Mr. Chairman, I do have one other line of questioning I would like to pursue. Then I will submit the rest of mine in writing.

Senator Reid [presiding]. You are about 10 minutes over your time, but you go right ahead. [Laughter.]

Senator Bumpers. I'm supposed to be chairing this anyway. [Laughter.]

Senator Reid. Just take it up with Senator Byrd. [Laughter.]

PARK CONCESSION CONTRACTS

Senator Bumpers. About 4 months ago, Secretary Lujan came to my office and we discussed at length his concern about the park concession contracts. You are familiar with that. I understood that he asked for a study to be completed by March 1.

Mr. Ridenour. Yes, sir.

Senator Bumpers. I have not seen it and I have not seen any further action. It is a matter of great concern to me, and it is one that I want us to get on this year if at all possible.

You probably saw this story in the Wall Street Journal, and when people across the country read that, they wonder if the people up here need a saliva test. I am not criticizing MCA because I know they have made contributions other than the fee they actually pay us, which is about three-quarters of 1 percent of their gross. They insist that they have put $100 million in Yosemite in improvements in addition to that, which would run about $5 million a year they are paying. But, obviously, of the 500-plus concessionaires we have in about 170 parks, a lot of those like finding bird nests on the ground.

It took me 8 years to change the leasing laws of this country to keep from giving away land for $1 an acre for oil and gas drilling. Now, I am in a fight with Senator McClure and Senator Reid and other lesser lights in the Senate [laughter] on mining laws where you can go on to Federal land and mine hard rock minerals and not pay the Federal Government one red cent. I have not completed that. I am anxious for Senator McClure to retire. [Laughter.]

I think I can get this done a lot faster with him gone. [Laughter.]

Now, my third project to try to save the taxpayers of this country from the U.S. Congress is this matter of park concessions.

Can you tell me whether or not we are going to get a bill from the Park Service? Are we going to be privileged to see this report? Where are we on this?

INSPECTOR GENERAL'S REPORT

Mr. RIDENOUR. Yes, sir; at the same time the Secretary charged us with putting together a task force to study the concession situation, he also asked the inspector general to make a report. We felt like there were a lot of issues that were very important and were pretty complex. And the task force asked for the opportunity to see the results of the inspector general report prior to making their recommendations in the task force report.

They have done that, and I received the task force report last week. The Secretary gave me until last Friday to turn it in, and I turned it in on Thursday. His executive assistant has finished reading and the Secretary hopefully will read the task force report this weekend. Most of it agrees with many of the recommendations of the inspector general's report.

I don't know if there will be legislation in the inspector general's report and the task force report. There was only one recommendation for legislation and a lot of recommendations for administrative change.

There is one thing that confuses and concerns me a bit—and I am not coming to the defense of the Yosemite Park and Curry Co. But as I said in a press report the other night, that contract was signed 30 years ago. You mutually had to agree to renegotiate. Well, you are not going to mutually agree if it——

Senator BUMPERS. I wouldn't renegotiate that contract if I were MCA.

Mr. RIDENOUR. That's right. Some people have been very, very critical of Yosemite Park and Curry Co. for not renegotiating, but our park superintendent and I have made the point about my parents may have signed a 5-percent/30-year mortgage with the bank a number of years ago. The bank cannot come back and say to them, well, now things have changed a little bit. Things look better. You ought to pay us 10 percent. My parents signed in good faith for 5 percent. And that is the kind of position that park and Curry has been placed in.

I think they have received some adverse publicity. They know and we know that as sure as we are sitting here, the next deal that is negotiated, which is 3 years from now, will not contain provisions that are anywhere near as favorable to them as they had been in the past. But I just want to make the point that they have a valid existing contract.

We no longer issue contracts that give concessionaires the right to mutually agree before we would have a renegotiation. Our contracts now will say that the Secretary has the right to open up the renegotiations at whatever period he puts in the contract, and it is not a mutual agreement situation.

USE OF CONCESSIONAIRE FEE REVENUES

Senator **Bumpers**. The park concessionaires last year took in $470 million and the U.S. Government got $11 million. Now, does that $11 million go to the Treasury?

Mr. **Ridenour**. It goes to the General Treasury. At one time we had a visitor facilities fund.

One of the real questions in my mind, and it is one that takes place at every level of government, whether you are talking about city council, State governments, or here in the Congress, is what should be done with that money. I have never seen a budget officer or anyone who is counting pennies ever agree that those moneys should be put somewhere other than through the appropriations process.

I guess I would like to find some creative way that it is used to the Park Service's advantage. We have to approve the prices. We approve the prices of rooms, hamburgers, bicycle rentals, and everything else. If I add an extra quarter to the price of a hamburger in Yellowstone National Park or wherever, people would know that money is coming back to the park. Even if we ended up in a situation where we shared 60 percent of whatever new revenues there were or 50 percent, 50 percent might go directly to the Treasury, 30 percent to the park, and 20 percent to the Regional Director to use among other parks that might not have the possibility of getting some of those additional funds. We need to find a way, as we increase the funds coming into the system, to use them in the parks in some fashion. And we have to reach an accommodation between the Congress and the Secretary as to how to do that and how to explain it to the American public.

Senator **Bumpers**. Well, it is complex. Senator McClure and Senator Domenici will both recall we held extensive hearings on this back in the late 1970's, and I must say as a freshman Senator at that time, I found it to be much more complex than I thought. But I did come away from those hearings believing that it was a terribly unfair arrangement so far as the taxpayers of this country are concerned.

And as hard-pressed as we are for money for this Park Service, we have this big America outdoors study recommending all kinds of good things. We are not even in the ball park. We are not doing anything about that. I thought it was a good study, and it was made up by a bunch of fairly conservative businessmen for the most part.

AFFIRMATIVE ACTION PROGRAM

When you go into these parks, you find a lot of college kids there. Do you have a good affirmative action program for that?

Mr. **Ridenour**. In terms of our summertime people, we are working closely with the historically black colleges and universities trying to aggressively increase our numbers. Our numbers are not as good as we would like.

Senator **Bumpers**. How low are they?

Mr. **Ridenour**. Herb, maybe you have a better figure on that.

Mr. **Cables**. I think, in answer to that question, Senator, we probably have a very good percentage of minorities in our urban parks. Where we fall off is in some of the more traditional and western parks where the opportunity to attract minorities is very difficult. We are instituting a program this summer that is intended to introduce inner-city youngsters to some of the more traditional parks in the hopes that, as they move through and are afforded an opportunity, they will start going to the parks that, at this point in time, have a very low minority rate.

Senator **Bumpers**. Mr. Chairman, you have been very patient and I thank you very much.

CONCESSIONAIRE CONTRACTS

Senator **Reid**. I would just say one thing in passing.

Under the present arrangement, doesn't the concessionaire take care of the capital improvements? Not necessarily?

Mr. **Ridenour**. It depends case to case.

Senator **Reid**. We can get into that later.

Senator **Bumpers**. You do in Yosemite, but you don't in Yellowstone, for example.

Senator **Reid**. Senator McClure.

Senator **McClure**. Mr. Chairman, just a comment on the concessionaire question. It is a complex one. I think the thing that I would hope to avoid is trying to adopt a blanket policy to respond to some situations that might create a greater problem in other situations.

For example, it is very easy to point to the areas of very intensive use, the popular destination points, the ones that are large enough that you can get facilities inside the park, and generate that kind of revenue inside the park as contrasted with the others that have very little drawing power. We do not have the money to put in the concessionaire facilities, and we have to almost beg somebody to come in and make the investment, which is good for us and good for the taxpayers. The identical policy might help one situation and just completely destroy the other situation.

Senator **Bumpers**. Jim, if you would yield on that point.

Senator **McClure**. Surely.

Senator **Bumpers**. This is a very big issue for the Park Service this year and it is a big issue with my subcommittee over in Energy and this subcommittee.

It is my understanding and one of the things that bothers me—and you correct me if I'm wrong, Jim—when MCA, for example, in Yellowstone say they have put $100 million in improvements there since—I think they bought that contract from somebody that was in trouble back in 1973.

Incidentally, those things ought not to be assignable without your permission either.

But don't they have pretty much say-so about the kinds of improvements, and aren't those improvements designed to improve their part of the operation of the park and not necessarily building a bridge across a creek to help people get to a bridle path or something else?

Mr. **Ridenour**. I think it has been some of both. And how would you classify a parking lot, for example? It is to our advantage, for example, to have a parking lot. Maybe it is to their advantage as well. So, there is a real mixture there. There is no doubt that Yosemite Park and Curry Co. have done things where you would have to stretch your imagination to say that adds to the bottom line of Yosemite Park and Curry Co.'s profit.

Senator **Bumpers**. Let me ask you this. If we felt that the most important and significant thing for that park was to acquire a 20-acre tract outside the park, you could not use that money. You would not use that money to make that acquisition.

ACTION ON OPPORTUNE SITUATIONS

Mr. **Ridenour**. That is correct, and that is where I think we have to work with the Congress to figure out some way to give us the opportunity to act in those kinds of situations. Appropriation committees I know traditionally do not want to do that. They want to make sure everything flows back through the appropriation committees, but opportunities do not always exist at the exact time when appropriation committees might be meeting. I do think we need to find some way to take care of that specific situation.

You made a point about the size of some of these organizations and whether we should have the right to approve, for example, a sale. We got word that there was a major buyout to be taking place that included a whole bunch of businesses, one of which was TW Services, Inc., which is a concessionaire in our park system. It turned out that there were a lot of things in that buyout besides TW Services, Inc. We are talking about literally billions of dollars, and we were referring to a situation where a group by the name of Conaston Partners was looking at the buyout. There were three TW Services organizations in it—I mean, three in different regions. We had three regions involved in this buyout.

I disapproved the buy-out. Yet, when I called the lawyers for the Conaston brothers and in sort of an apologetic way, said I hoped I was not messing up the whole financial structure of their organization, their answer was, that it was such a small part of their business that it really didn't matter whether we approved or didn't.

That bothers me because it tells me that the nature of our concessions business is changing dramatically.

And I think the Senator makes a very good point. We have situations where we are begging people to run a concession to provide a service that the public cannot get unless that person provides it. It might be a gas station way out in a remote area where we almost have to beg them to be there. And the other situation might be the big one where the Conaston associates were so big that that little bitty business of TW Services, Inc., meant very little one way or another to their total package.

So, we do have to maintain some flexibility I think to deal with what I would call, for lack of a better term, the mom and pop type situations that we have known for so long and for the big companies that have come in and have totally changed the nature of the way we deal with concessions. They are a totally different animal.

And quite frankly, we do not have the people—we do not physically have the people—on our staffs. We have excellent people with good business knowledge who have worked with concessions for many years, but we do not have people that know the junk bond business and would say, "wait a minute, what's going on here." Somehow I was a little bit worried when I saw Conaston Partners picture in the USA Today a couple weeks ago. In fact, I wrote a note to myself. I wonder if these guys really care what a hamburger tastes like in Yellowstone. [Laughter.]

Senator McCLURE. Well, there are an infinite variety of situations. A large park in Alaska at a remote location might have a very, very marginal business operation. A concessionaire might find it very difficult to be in business there. And if we put a 5- or 10-percent tax on his gross, he says, "Forget it, I'm gone."

Senator BUMPERS. Are there instances where we pay a concessionaire to do something? Do we ever do that?

Senator McCLURE. I don't think so.

Mr. DAVIS. I don't believe we can do that except in cases of hospitals.

Senator McCLURE. Although it might be economically efficient for a taxpayer to find a way to do that, it would cost us less to do it that way than to require it to be done at taxpayers' expense.

But that is all I am saying. It is an infinitely varied scene, and I think we have to be careful when we are dealing with it.

USE OF FEE REVENUES

I might also say, Dale, while you are here, in terms of the recycling of revenues back into the parks—and we support that—we tried to do that with the park fee proposal that was adopted. We are having some difficulty keeping that within the parks that generate it because there is an immediate demand to spread that money around among the rest of the parks that do not generate it.

We also have the same thing with respect to mineral receipts and timber receipts on other public lands. We would like to get that back into the management.

Let me yield to Senator Domenici.

Senator DOMENICI. Thank you very much, Senator McClure. I was going to say this before my good friend left, but one time, Senator McClure and Chairman Reid, after he had made one of his arguments in the Energy Committee, and we all knew the facts, I told him that I would hate to have a jury case with him when he actually had facts on his side. [Laughter.]

QUALITY OF NATIONAL PARK SERVICE OPERATIONS

In any event, Mr. Director, let me tell you what I would like to discuss for a few minutes. I would like to suggest to you that the one thing you not forget as you feel the pressure from all of us, and from everyone else around that wants to do more, that you are in charge of a very, very special operation of the Federal Government. In my humble opinion, I think you ought to start your budgeting every year by asking whether the quality of the National Park Service is being maintained. I think before you decide that you are going to do all these other things, which we fuss about, be sure that you are not letting this one professional operation, which is the absolute envy of the world, degenerate.

It is a superb system. That is why everybody around this country wants a national park. That is why we invented all kinds of new ways to get you involved in our States, because the Park Service is great. And if you let that system deteriorate, it would be a shame.

We are having a lot trouble in the Federal Government. There are huge amounts of problems in the Federal Government keeping crackerjack, top personnel. I would assume that you are having a little less trouble with that than most, but might I assume that the Park Service needs more people. Are you able to keep good people? Are you losing any? Do you believe that the quality of applicants for these new positions are up to the Park Service's professional reputation?

MAINTAINING QUALITY STAFFING

Mr. RIDENOUR. We are having a difficult time keeping people especially in certain geographic areas in the country. There are a number of things that contribute. Salary contributes. The ability to house people I think presents us a significant problem. We are aggressively going into a new intake program which I might call on Herb to talk about just a little bit. But it is a problem for us.

In addition, we have a very aging group of people who are in that baby boom group that is moving through and, for lack of a better term, the baby bust group coming behind is much smaller and not getting the opportunity to be promoted because the baby boomers are still there. So, we do have significant personnel problems and problems that we are working on.

And we find that probably the best way for us to work on them is on a geographic basis. A person who is very well paid in a Kentucky economy or a Tennessee economy absolutely cannot make it in a New York or a Philadelphia or Boston or wherever it might be. So, we recognize those problems, sir.

And I appreciate the kind words you said about the Park Service.

Senator DOMENICI. I do not need any further explanation, because I do not want to use more than my 10 minutes. Senator McClure has been very generous in yielding to me.

Let me suggest that while I might have been more pleased if you had enhanced some of the facilities in my State even more, I do congratulate you in that this budget does, for most of the park operations in New Mexico, such as Carlsbad Caverns, White Sands, and the like, increase the operations and maintenance budgets. That is an improvement over previous budgets. That is also essentially what I'm talking about. This action is absolutely imperative before you do the new things. And before I am finished with my 10 minutes, I will be asking you for some new things just as I have indicated we all will.

CARLSBAD CAVERNS NATIONAL PARK

Could I ask a question with reference to Carlsbad Caverns? I note that our Regional Director is here, and if you want him to answer, fine.

We are in the throes of drawing a new master plan for the utilization of the Carlsbad National Caverns, one of the true marvels of the United States. How far along is the new master plan for utilization of the lands and facilities? Might somebody tell us for the record?

Mr. **Ridenour**. I will call on John Cook.

Senator **Domenici**. John?

Mr. **Cook**. Thank you, Senator. John Cook, Southwest Region.

We have not begun the revised master plan, Senator. While it has come out of the Senate, it has not been passed out of the House yet.

Senator **Domenici**. All right. So, it's in the bill we sent over there along with a couple of other items, and they have not authorized your doing that work.

Mr. **Cook**. That is correct. And if you will recall, you put in there that the plan would be due 2 years subsequent to the availability of funds.

Senator **Domenici**. Would you mind, whether it has been authorized or not, submitting for the record how much that plan might cost, including the first year cost? Would you give us that figure?

Mr. **Cook**. Yes, sir.

Senator **Domenici**. Thank you very much.

[The information follows:]

Carlsbad Caverns National Park

The estimated first-year cost to prepare a General Management Plan for Carlsbad Caverns National Park is $125,000.

NATIONAL NATURAL LANDMARK PROGRAM

Senator **Domenici**. Let me just move quickly to two other items.

Your National Landmark Program identifies recognized landmark designations in those areas of national significance, either geological or ecological.

Are we sure that the National Park Service, other Federal agencies, and private entities are providing affected landowners the correct nomination and evaluation of their land under this landmark program?

Mr. **Ridenour**. We aren't sure today, sir, because I have suspended the program until we have had a chance to review what has happened in the past and try to see where it should go in the future, including the rules and regulations process. But essentially I have suspended the program with the exception—I want to be very careful with this because no matter what I say, the words seem to get twisted—with the exception of those nominations that were in the process when I suspended the program, and those will proceed forward only with the concurrence of the landowners.

Senator **Domenici**. So, you must have already received significant complaints with reference to the implicit, if not explicit, alleged violation of private property rights by Americans under this process. Is that correct?

Mr. **Ridenour**. Yes; that is correct.

PARK CONCESSIONS

Senator **Domenici**. With reference to park concessions, I was going to ask questions about it, but I think we have had more than enough. I take it that it is fair to say that the concessionaire business is being evaluated, and recommendations are going to be forthcoming with reference to the propriety or impropriety of what we are doing, and any changes that might be warranted. Is that correct?

Mr. RIDENOUR. Yes, sir.

Senator DOMENICI. How long do you think that is going to take?

Mr. RIDENOUR. Well, the Secretary made a comment on television the other night about 6 months. I do not know, not being his decisionmaking authority, if he has determined that there would need to be congressional action, and how long that takes to get done. But certainly some of the actions that are recommended in the task force report can be started immediately.

ARCHEOLOGICAL RESOURCES

Senator DOMENICI. My last question, Senator McClure, then I will again thank you for yielding.

I have taken interest in archaeological resource protection. Everybody has to take on something. I note that we want to protect so much of the past, and yet archaeological resources are being devastated in this country, whether they be Indian, pre-Indian, or prehistoric. People are stealing them or destroying them at an alarming rate.

First, I want to compliment you because you do have about $60 million in the 1991 budget for cultural resource management under the National Park Service. That is a very large increase.

But I also want to ask how the National Park Service has complied with the 1988 archaeological preservation amendments that directed you to develop plans and archaeological surveys of its lands and to prepare a schedule for surveying these areas so we will know where we are going and what we can expect with this process? This is all part of the statute now. Where are we on that?

Mr. RIDENOUR. If I could call on Jerry Rogers please.

Mr. ROGERS. Mr. Chairman, Senator Domenici, that is a factor in the budget request before you. The Service is prepared to conduct surveys as funds are available to do so.

Senator DOMENICI. So, are you starting to do some?

Mr. ROGERS. There are surveys underway within certain budget items like our cultural resource preservation program and even some with park-based and some with construction project funding, but it is a beginning. And I think that is how I would describe it.

Mr. RIDENOUR. The figure that is in our 1990 budget for the beginning of this program is $500,000 and 20 employees. I do not think that takes into account the fact that we are doing a lot with the presently existing people, but this would be specifically for that program.

PARK SERVICE PROFESSIONALS WORKING WITH STATE AND CITY PERSONNEL

Senator DOMENICI. My last observation has to do with the use of Park Service professionals. It seems to me, Mr. Director—and I am not a professional, but it seems to me that while I have just told you that I think you have a jewel in terms of professionalism and preservation and the like in our Park Service people, I also think there are rare opportunities to do new and different things. I hope you don't adopt a rigid policy.

An example is the proposed Petroglyph National Monument outside of the city of Albuquerque, NM. The city, State, and Federal Governments are going to participate in buying land and in contributing land for this park. Then we would ask the National Park Service, under our legislation, to manage it. In some cases, the city or State people would be working with you so that the Park Service would not have exclusive jurisdiction over the park. I frankly do not think that is a watering down of your expertise, but rather a challenge, and I hope you feel that way.

I sense that there are among our professional staff—not in this committee, Senator McClure, but in some of the authorizing committees—a mindset to proceed only in one way all the time. Anything different will not get through. I just want to share with you that I do not think anything is that rigid in this day and age, except for some parts of Congress. [Laughter.]

Mr. RIDENOUR. It is fortuitous that you mention that today. Last night we met with the president of the State Park Directors Association, the president of the State Historic Preservation Officers Association, and the president of the State Outdoor Recreation Liaison Officers Association. All 10 Regional Directors and myself and my Deputy met with that group of people, and the very point was made.

Of course, I come to the Government from State government, and before that from largely a States' rights organization. And my point was then that there are many things that the local government can do as well, if not better, than we can. There are many things that the State can do as well, if not better. There are things that we can do better than they can. And it is the partnerships that we will have to forge that will be the future of this organization and their organizations as well because it is no longer possible for any one of us to dominate that landscape.

Senator DOMENICI. Thank you. Thank you, Senator McClure. Thank you, Mr. Chairman.

CITY OF ROCKS NATIONAL RESERVE

Senator McCLURE. Thank you. Pete, that last subject is one of the areas which I was going to explore to discover exactly that relationship and flexibility, because we have a problem in the City of Rocks National Reserve, which was established by Congress with respect to the issue of hunting. And there is not any doubt about it in the legislative history. We contemplated that hunting would be permitted.

There is in the interim period between now and the time that the State management of the reserve will be finalized, whatever cooperative arrangement may evolve, the application of, as I understand, Mr. Director, the solicitor's opinion that says, no, you cannot do anything different than we have ever done. We have to go back to the Organic Act to find our limitations and our authority. We have regulations issued under the Organic Act which are inflexible and immutable, and, therefore, we have to say that no matter what the legislative history says, hunting will not be allowed in that area while the Park Service administers it.

Now, I jump into that right now. I had planned to leave it until the last rather than bring it up at the first, but it springboards directly from your suggestion that new relationships can be forged that are different.

I have had a number of conversations with the Director on this subject because it is very, very damaging to Park Service credibility and reputation in my State when the Park Service finds it impossible to do what the legislative history says it should do.

Mr. RIDENOUR. Mr. Chairman, I would just say this. When I was in the private business world, if I didn't like what my lawyer said, I simply hired a new lawyer. [Laughter.]

Senator MCCLURE. Amen. Can you do that here? [Laughter.]

Mr. RIDENOUR. In Government circles, it does not seem to work quite that way. And as you know, you and I have had a number of conversations. We philosophically are where you are, and now trying to get there legally is our problem.

Senator MCCLURE. Your real answer was what you just said: Fire the attorneys and hire a new set. [Laughter.]

You haven't been around this town as long as I have.

I say that very respectfully of attorneys. I was a city attorney at one time, and working with my fellow city attorneys in Idaho and across this Nation, I found that there are two kinds: the attorneys, when asked by the administrators, who say we want to do this, and then go out and find all the reasons why it couldn't be done; or the other kind of attorney who tries to find a way to accomplish what was desired to be done. There are very clearly two different kinds of attorneys. I think nearly all of the former kind migrated to Government service. [Laughter.]

They try to find a way to tell you that you can't do it. And I really do believe—and I mean this sincerely—solicitors, whether in your Department, in the Department of the Interior, across Government, generally speaking play it safe.

Senator REID. Just say no. You can't get in trouble.

Senator MCCLURE. The old "keep your hind end covered," you know, that kind of thing. Just say no. Don't take a chance. Just say it can't be done, and then you never get in trouble. And if you say yes to something, somebody might blame you for it sometime.

I am trying to erect, and have for years in my service in the Congress, some idea that solicitors can get in trouble by saying no as well as by saying yes. And frankly, I have made no progress. [Laughter.]

NATIONAL PARK RESERVES

I wish I could because I think the attorney's duty is to advise clients not to try to set policy by saying you can't do it that way.

We did create a new relationship in national park reserves. That is a new concept. It has only been tried two or three times in this country. You have not, within your own Department, developed any kind of guidelines or regulations that permit you to operate in a new and different kind of a framework. It is both your fault and mine that we have not attempted to do that. Then the solicitors would not be in the position to say, no, you can't do it because you haven't jumped through the necessary hoops in the process of getting that done.

SOLICITOR'S OPINION AND LEGISLATION

Right now we are faced in the City of Rocks with an absolutely untenable situation, and I know you have suggested we try to correct it by legislation, and that may well be better than trying to do it by administrative action in view of the opposition of the solicitors. I know that they are trying to keep you out of trouble by saying if you do it, you'll get sued. You will lose. That is an easy way for attorneys to act too because they can scare you out of taking the action and they never have to justify it, and they might have to defend your action if you took it.

I have often been struck by the fact that the Chinese at one time were asked to make a comparison between their system and ours, and they said in the whole of China with nearly 1 billion people, we have 60,000 attorneys, and, therefore, we must do better. [Laughter.]

I am an attorney, so I can say that.

But I really do believe that attorneys far too often try to find ways to make it impossible for you to function rather than trying to support you in the actions you wish to take. I would hope that we find a way to reward the activities of attorneys who are helpful and not just cautious. You need, and certainly if Senator Domenici is going to be successful in moving in new directions, he will also need the constructive activities of attorneys who try to find a way to get something done rather than trying to tell you why you can't do it.

Legislation is not the whole answer. Certainly those of us who are involved in legislating need to be aware of that problem too. It sends my friend from Arkansas up the wall when I keep asking questions about how are we going to do that, we better write into the law, we better make it clear what we are going to do, because he likes to make speeches rather than legislate. Legislation is a lot more difficult than speaking. I have said that to him personally. I am not talking behind his back.

I think we find that too often around here we generalize, we philosophize on paper instead of writing statutes that make it possible for you to administer. That is our fault. That is not your fault. I am very conscious of the fact that we cannot expect the administration to cure the defects of poor legislation.

But we thought in the City of Rocks we had written that kind of legislation. We very carefully wrote the legislative history. At no point in any of the hearings or any of the comments did the Park Service say you can't do that. It is only when you finally get around to trying to administer the law that was written that the Park Service now says, oh, I'm sorry. We can't do what you clearly intended to do. Why wasn't it ever raised before? I know that did not happen on your watch, but I can't help——

Mr. RIDENOUR. I think it was Herb's fault. [Laughter.]

Mr. CABLES. I'll fire the lawyer. [Laughter.]

Senator MCCLURE. Good. Is that a promise? [Laughter.]

Well, I'm frustrated by it, as I'm sure you know, and I don't like to have this kind of a minor irritant, but it is an irritant.

HAGERMAN FOSSIL BEDS NATIONAL MONUMENT

The Hagerman National Monument is somewhat different because in that instance we have pressure for some duck hunting along the boundary of the Snake River, which is the boundary of the monument. The hunters never mentioned that. It was their fault the issue was never raised.

I do not intend to suggest there is an administrative way for you to solve that. I do not think there is. I think it is going to take legislation if we decide to solve that question, and I think it can be solved. I do not think a few duck hunters sitting along the edge of the river and sitting in blinds or coming up there in boats is going to have much effect upon the administration of the area, which is dedicated to the protection and the display of fossil remains.

Mr. RIDENOUR. Since I do have to go back to the Department and live with our solicitors, I would in their defense say that there are a number of situations all across the country——

Senator REID. We do not allow their defense. [Laughter.]

Mr. RIDENOUR [continuing]. Where we have similar kinds of things. Some are in trapping I recall down in Louisiana, one in trapping up in Michigan. There are a number of cases in Alaska where we have similar kinds of situations, and it is their concern that if we make this administrative decision, it will open the door for the same types of situations in those places all across the country.

Senator MCCLURE. If they have national park reserves in those other places in the country, then it might. That is the very essence of what I am trying to say in response to what Senator Domenici said. For the standard, traditional, mainline units of the National Park Service as we have known them for years, certainly there is a well-known and oft reiterated ban on hunting within those areas.

In the national park reserves in Alaska that evolved through the ANILCA process, it is very clear that if hunting had not been permitted, that territory would not have been placed within the administration of the Park Service. It was an accommodation between the traditional uses of the land in Alaska and the desire to have it as a part of the Park Service that yielded this new idea of a national park reserve to permit hunting.

That is very clearly and distinctly different from all other units. As we get into those kinds of things, we have to very carefully distinguish those new units with new management directives because they are unique. I do not think they are a precedent in areas that are not so designated. That is why I make a distinction between the two in Idaho that were created in the same year, the Fossil National Monument and the City of Rocks National Reserve—one in which hunting was intended to be permitted specifically and the other in which hunting was never an issue, never mentioned and understood that it would be banned.

We will work that out one way or the other, and I appreciate your willingness to work it out. I am frustrated, as I am sure you must be, by the lack of vision of attorneys that keep themselves covered instead of trying to help you.

With respect to the Hagerman Visitors Center, in the fiscal year 1990 appropriations bill, $200,000 was provided for planning and design of a visitors center at the Hagerman Fossil Bed National Monument.

What is the status of the planning and design?

Mr. RIDENOUR. Chuck Odegaard?

Mr. ODEGAARD. Senator, that's in process now. Hagerman and the City of Rocks are both in the planning process. The visitors center will be started at Hagerman once we're done with the general management plan. They are both in process and on schedule.

Senator MCCLURE. Would you be able to utilize construction funds in 1991 on the visitors center?

Mr. ODEGAARD. No, sir.

Senator MCCLURE. When will the visitors center planning and design be completed?

Mr. ODEGAARD. We will be done in fiscal year 1992.

Senator MCCLURE. Can we hurry you up by giving you more help? We would like to help you.

Mr. ODEGAARD. I don't think doubling the staff would increase the speed. It's a natural process which involves the local community, a lot of public meetings to get the public involved in it, and it just takes that long to bring it all to fruition.

CRATERS OF THE MOON NATIONAL MONUMENT

Senator MCCLURE. I understand and I will talk to you both about that and see whether there are things we can do. Obviously, we are anxious to get that done.

I will not take the time to ask you at this time about the Craters of the Moon National Monument expansion plans, but I am concerned about it. There is a lot happening out there right now. As I tried to tell Congressman Stallings, it was not as simple as just snapping your fingers and saying, hey, that's a good idea, we'll go out there and do something. There are a lot of conflicting interests that need to be resolved. I think he is now aware of that, and I think your people have helped make him aware of that.

MANASSAS NATIONAL BATTLEFIELD PARK

With respect to the Manassas Battlefield, the William Center tract, comprising approximately 600 acres in Prince William County, VA, was added through a legislative taking as part of Manassas National Battlefield Park Amendments of 1988.

It is my understanding that offers have been made on most parcels and accepted on some of the smaller parcels.

Can you bring the committee up to date on where we stand in that regard?

Mr. RIDENOUR. Will Kriz.

Mr. KRIZ. Senator McClure, we have settled on one of the three small residential parcels at a figure of $230,000. The other two are under negotiations now. They are valued approximately at $200,000 each. Of the larger parcels, we are nearing settlement with two of them at a total of about $30 million.

Senator McClure. That's $30 million?

Mr. Kriz. Yes; that is for the Northern Virginia Homes property and another one called—well, it's two entities together, the Northern Virginia Homes totaling $30 million.

That leaves the Hazel-Peterson tract which is the large one and the most expensive one. The appraisal is not yet finished but we have commenced negotiation with the owner making an initial offer through the Justice Department.

That leaves the Virginia Power Co. right-of-way through the park yet to be appraised.

Senator McClure. That hasn't been appraised yet?

Mr. Kriz. It has not. The request for proposals is just going out. It has not yet been appraised. We expect that that power line is going to be rerouted possibly along the edge of the addition, but the total cost is probably going to be somewhere on the order of $100 million. But there are so many variables that it makes it difficult to predict. It depends on whether——

Senator McClure. I wish Senator Bumpers were still here because I said on the floor of the Senate at the time that if action was taken it might cost as much as $100 million, and he said, oh, impossible, or words to that effect. You may have your problem with Senator Bumpers when you try to justify that $100 million.

Thank you very much.

Mr. Chairman, I have a number of other questions to submit, but I will submit them in writing for a response to the record.

Senator Reid. Senator McClure, you have been very patient and considerate to the other members. I am grateful to you. I am sure they are even more than I.

ARCHAEOLOGICAL RESOURCES PROTECTION

Senator McClure. Could I just make one comment on Senator Domenici's question about the protection of archaeological facilities?

Senator Reid. Sure.

Senator McClure. I understood you to say you have 20 employees and a budget of $500,000. Just quick mathematics says you get the entire support of 20 employees at an average of $25,000 apiece. I do not know where else you do that. I just wonder if your two figures are correct.

Mr. Ridenour. Perhaps I am off on the figures. Jerry?

Mr. Rogers. The figure is correct. The $500,000 is for law enforcement to protect archaeological sites, and I assume your calculations are correct.

Senator McClure. So, that is not the total figure. That is just an amount that has been allocated, and 20 employees may be involved, but not full time.

Mr. Rogers. As a matter of fact, that will use 20 full-time employees.

Senator McClure. Is your full cost per employee $25,000 on the average?

Mr. Rogers. I cannot answer that. That comes from the ranger corps.

Mr. **Sheaffer**. Yes, sir; we have average salaries in that range, just salaries.

Senator **McClure**. Well, that is just salaries, but that does not include your overhead.

Mr. **Sheaffer**. Salaries and benefits.

Senator **McClure**. And benefits?

Mr. **Sheaffer**. It would be the marginal cost when we put an additional GS-5 or GS-7 ranger in a park.

HARPERS FERRY NATIONAL HISTORICAL PARK

Senator **McClure**. Thank you very much, Mr. Chairman.

Senator **Reid**. Thank you, Senator McClure.

Before we leave this subject, would you tell me about Harpers Ferry? Would it also be included within the Civil War battlefield comprehensive analysis?

Mr. **Ridenour**. We are making an exceptional study of that particular area. [Laughter.]

It would be, but at this point, this is a subject that has just come up from the Secretary as of this morning. So, we have not really planned the strategy as of yet. His question to me is, does it make sense that we take a look at this on a national basis? And we are in the process of giving him an answer today.

Senator **Reid**. How long will it take you to come up with an answer for the Secretary? Are we talking about weeks or months?

Mr. **Rogers**. Two or three days.

Mr. **Ridenour**. We are talking about 1 week.

LAKE MEAD NATIONAL RECREATION AREA

Senator **Reid**. Congressman Regula has, from the day I came to Congress, been talking. He really understands Lake Mead which is located far from Ohio in Nevada. And he has been interested in setting up entrance fee collection sites at the park. It is the most heavily used entity in our park system. Some 9 million people went there last year. At least that is my understanding. That is what I have been told. It is very heavily used. And, he has not lost his vigor. He is very interested in this entrance fee situation.

It is something I want to consider. I think that, being very provincial about it, most of the use is from people outside the State of Nevada, and the additional dollars would come back. If we appropriate these moneys and open the visitor site collection areas, money would come back to be used within the park.

I would ask your assistance in this. We are going to be marking up an Interior appropriation bill soon. Prior to doing that, I would ask the Park Service to use whatever resources they have at their disposal to do some minipublic hearings out there to find out how the bass fishermen feel and to find out how the boat owners feel. There are a number of clubs and organizations that are heavily involved in that Lake Mead Recreational Area. This is more than telling them what is going to happen, to explain to them the benefit of this site collection, if, in fact, there are benefits, and I have been told there are numerous benefits for establishing this. But just to spring this on them after passing the appropriation bill, I can recognize it might just cause a lot of consternation even though the fees are very minimal. A family would be $4 or $5 a year. Individuals would be less than $1. Could you do that?

Mr. **Ridenour**. Yes.

Senator **Reid**. Report back to me so that when this appropriations process is beginning, we would at least have the knowledge that the people, who are the biggest local users of that, have some knowledge of it.

BENEFITS OF FEE COLLECTION

Mr. **Ridenour**. I am used to a fee program in my own home State. We think we ran a very successful fee program. It does a lot of things. No. 1, it collects fees, which is a good thing, something we need.

But No. 2, it gives us a chance to eyeball people coming into a facility. And you know we have had some vandalism problems. We have had two shootings, I think, at Lake Mead this past——

Senator **Reid**. The violent crime rate has gone up in the hundreds of percent. You know, it is probably the only park that operates near a major metropolitan area that is open 24 hours. The poor park rangers are at their wits' end trying to maintain that park in safety, notwithstanding all the other problems. Information has been given to me that there are narcotics operations taking place in the vast park area because, simply, we do not have the personnel to police it.

You are right. The two that you mentioned are just two of many violent crimes. Rapes take place there, all kinds of things, that we never had problems with in the past.

The visitor use has gone up almost 50 percent since 1983.

Mr. **Ridenour**. Our experience has been that if you have some sort of a fee collection system that puts people by a point at which you collect a fee and you come eyeball to eyeball with those people, that you see significant drops in vandalism, you see drops in crime. There are just a lot of advantages besides collecting a fee.

But specifically on Lake Mead, we estimate that a phased investment of $2.1 million in startup costs and about $0.9 million annually in operating costs would generate about $4.3 million in annual fee revenue at Lake Mead alone.

Senator **Reid**. I am not sure that is the answer, Mr. Director. The recommendation from your office is less than a 2-percent increase, three new people. It is not only the busiest, but it is the largest entity in that entire park system. Putting three people in there is actually one position because you have to work three, 8-hour shifts. We really need some attention there.

You could do me and the entire Nevada congressional delegation a great service by alerting the people who are the big users of the benefits of this site collection fee because we get a lot of criticism that we are not raising taxes. We are doing user fees and selling assets and things like that. This is something that I think needs a little groundwork before we do it.

Mr. **Ridenour**. Yes, sir; we will do that.

SANITATION PROBLEMS—LAKE MEAD

Senator **Reid**. We have a lot of problems at Lake Mead, not the least of which is—we were talking about the crime—the sanitation. We have these 9 million people coming into that facility, and we were able through the assistance of the other people on this subcommittee to get some help for sanitation facilities. We need lots more. When these hundreds of thousands of people come on a weekend, they literally have no place to go to the toilet. So, they go the only place they can. And the desert air being such as it is, dry. It is very, very bad. Anyway it stays there forever. The first rain that comes washes it all into the lake. Very unsanitary. We are trying to work on that, and we won't go into more detail.

Mr. **Ridenour**. We do have some sanitation facilities on line in this 1991 budget for Lake Mead, including some floating toilets, which will be kind of interesting.

Senator **Reid**. We can move those around to some of the areas.

Mr. **Ridenour**. I have a hard time envisioning those myself, but I guess they work. [Laughter.]

CLEAN AIR AMENDMENTS

Senator **Reid**. I could not help looking at some of Senator McClure's questions. He had a number of questions, as do I, dealing with the clean air amendments as it relates to the Park Service. There is authorized some $8 million to look into this. It adds to the responsibility of the Park Service, and I would ask that you look at the written questions that I will submit and Senator McClure will submit on these issues because they are real important. We have to get a handle on this clean air bill as it relates to the Park Service.

Mr. **Ridenour**. Yes, sir.

Senator **Reid**. That was my amendment, and I know Senator McClure felt strongly that maybe it was not the right way to approach things in certain areas. But it is done, and now we have to find out if it is going to be a workable situation.

I haven't even gotten into my West Virginia questions. [Laughter.]

I think that's maybe what the chairman would want because I do not think the day is long enough for us to complete these West Virginia questions. I will just give you a little hint at some of them. These are just the first few.

Mr. **Ridenour**. We will be glad to accommodate whatever direction you would like to take.

Senator **Reid**. The one thing that Senator McClure asked and Senator Cochran asked is on these general management plans.

GREAT BASIN NATIONAL PARK

We, of course, are concerned also with the Great Basin National Park. And I guess my advice and counsel to the Park Service—and certainly that's the indication we got from the white-haired gentleman back here who also, I bet, doesn't know my friend Jack—[laughter]—that you stick to the program. These are phased in over a certain period of time. At Great Basin, we badly need a visitors center. We need some new campsites and we need a lot of things there. My personal feeling is we have to wait until the work is completed so that we do it the right way the first time and not a hodge-podge of things that may not fit with the plan. So, that would be my only suggestion.

CHANNEL ISLANDS NATIONAL PARK

We have a lot of questions about the Channel Islands, which is a very controversial issue as to whether we should purchase part and not have it all. You are familiar with those questions. We have them in writing. I would ask that you pay special attention to these questions and give us more detail because this could be a contentious issue this year during the time that we are trying to provide money for so many things that are needed.

DENALI NATIONAL PARK AND PRESERVE

We also have some questions about the issue of mining claims in Denali National Park and Preserve in Alaska, lots of questions in that regard. That also could turn out to be a very contentious issue, and we will need your assistance in giving us some direction there.

Has the service made a decision to attempt to acquire all the mining claims? We are talking about Denali. If so, why are funds not requested in the budget for that purpose? If not, why does the budget justification say on page 93 that the proposed action in these studies is to acquire all valid mining claims?

Mr. RIDENOUR. I will call on Boyd Evison, but I will say that we have had discussions since the preparation of this budget about what should be the proposed option. And we have made a recommendation in terms of those claims at Kantishna, which is in Denali National Park and Preserve. And with that, I will turn to Boyd and give him a little leeway on what it would take.

Mr. EVISON. There is $500,000 provided in this year's budget for validity examinations at Kantishna, and we expect that to be done this summer, virtually all if not all of it. Until those are done, we really can't estimate very accurately what the cost of the buy-out will be.

Senator REID. But do you want to buy them all?

Mr. EVISON. That is the preferred option. That is the option that we have recommended, yes.

Senator REID. I guess that's the problem that I have, and there is going to have to be some attention directed to that because if you have made a decision to attempt to acquire all these claims, you should request the funds.

Mr. EVISON. We will as soon as we know what it will take.

Senator REID. You don't think it will be in this cycle?

Mr. EVISON. Not until we have done the validity examinations.

Senator REID. But I thought that would be this summer.

Mr. EVISON. It will be.

Senator REID. So, this would be in the 1992 budget then?

Mr. EVISON. Yes; I think that's correct.

Mr. RIDENOUR. We are getting ready to put together our 1992 budget now. So, it will really be 1993.

Senator REID. Yes, 1993. I understand. We would think if you have it this summer, it would be for the next cycle, which would be 1992.

Mr. RIDENOUR. Well, it would be after we submit our 1992 proposal. So, it could be added.

JOHN F. KENNEDY CENTER FOR THE PERFORMING ARTS

Senator REID. The subcommittee has a copy of a letter dated March 22 from John Sununu, the White House Chief of Staff, to our ranking member, Senator McClure, in which Mr. Sununu acknowledged that new funding may be required for various maintenance and repair requirements at the Kennedy Center. The letter further indicates that the administration would have no problem with the appropriation of an additional $30 million in the 1991 Interior appropriation bill for these purposes.

Is the administration planning to submit a budget amendment for this amount?

Mr. RIDENOUR. No.

Senator REID. So, where are we going to get the money?

Mr. RIDENOUR. Through add-ons. [Laughter.]

Senator REID. I think that's a good place to stop, don't you? I think you better stop while you're ahead. [Laughter.]

That is a good answer. [Laughter.]

Mr. RIDENOUR. We have recognized the total amount which includes the garage repair and the structural repairs and mechanical repairs. And it comes to $30 million. In addition, there is a $15 million catchup that relates to operations. Those figures we have just received lately and were not included in our budget request. So, Bruce, how do we do that? [Laughter.]

Senator MCCLURE. Mr. Chairman, I might just note for the record that, indeed, that was the result of a number of extensive discussions between the Kennedy Center board——

Senator REID. Of which you have some knowledge.

Senator MCCLURE [continuing]. Yes, on which I serve—and Mr. Wolfonson, who was being discussed as the successor as operating chief of the Kennedy Center board of directors. And Mr. Wolfonson had pointed out certain financial requirements that he thought were absolutely essential if he was going to undertake the job.

In discussion with the White House, Mr. Sununu specifically outlined what would be necessary before he would be willing to undertake the responsibility, and those figures surfaced. At that time, Mr. Sununu said, yes, I want to see more detail. More detail was furnished to him.

After discussing a second time after further detail was furnished, Mr. Sununu said we will support that additional funding. He did not say by what mechanism or in what timing, but I think it was anticipated that Congress would take the necessary actions which would then be supported by the administration.

Mr. SHEAFFER. That is our understanding as well, Mr. Chairman. Incidentally, one number that was not mentioned was the $30 million for repairs, and an additional $1.6 million for operating deficit as well.

Senator MCCLURE. That's correct.

Mr. **Ridenour**. I did want to mention that $1.6 million because one of the problems in fixing something up is that it's fine to fix it up and paint it and that sort of thing, but if we are not taking care of it—for example, we have operating costs associated with increased costs of just cleaning the facility, a daily thing at the facility, and the water and sewer type situation which is facing us all.

Senator **McClure**. Well, we got an unhappy surprise when we did not cover that in the District of Columbia operating budget as we ordinarily do. It was an oversight and was assumed to be fixed, but didn't get fixed in the windup of last year's appropriation for the District of Columbia. That became a very real operating charge then to the Kennedy Center which it could not fund, and the Park Service was not in a position to fund. It was supposed to be absorbed in the D.C. operations and was not. It turns out to be a windfall to the District of Columbia and an additional burden on the Kennedy Center and the Park Service budget.

Mr. **Ridenour**. That is included within the $1.6 million.

Senator **McClure**. Yes, it is.

THE PRESIDIO

Senator **Reid**. As a number of Senators have mentioned here today, we have a limited amount of money to maintain these great parks. In fact, Senator Domenici was certainly graphic in his explanation.

No clearer example could be than the Presidio where we have so many responsibilities in addition to this. I guess the question that we ask and we are going to ask a number of questions in writing is why do we need to assume this new responsibility. Are there discrete segments of the Presidio to which you would prefer to limit your responsibility?

Mr. **Ridenour**. Stan Albright is here, but I would like to tackle that one a little bit myself.

Obviously, that is a great responsibility. That is probably some of the most expensive real estate in the world. There are, obviously, things there where it does-not make a lot of sense for us to be in an operational mode. Now, whether it makes sense for us to be in a landlord mode and in some sort of a leaseback arrangement—for example, the hospital would be probably a very good example. But there are certainly acreages contained there that lend themselves very well to the National Park Service responsibility.

We have planning teams, including 1 million dollars' worth of planning, I believe, that is in this budget. We will have some money coming from the Army as well, to help us in the transition period. But there is a tremendous amount of transition work that has to take place.

The direct answer to your question is, yes, there are areas of that facility that lend themselves very well to National Park Service authority. There are others that do not. That's what we have to figure out, how to properly allocate expenses and make a leaseback-type arrangement or some other sort of an arrangement.

Senator **Reid**. And limit the service's exposure.

Mr. **Ridenour**. Yes.

Senator **Reid**. Again, thank you very much. You have been here now for almost 3 hours, and we appreciate very much your being here.

The subcommittee will stand in recess——

Senator **McClure**. Mr. Chairman, before doing that, could I take just one moment?

Senator **Reid**. Of course.

COMMITTEE'S APPRECIATION CITED

Senator **McClure**. We have concentrated a lot on operating deficits, on the things that you have not done that you need to do, the backlog of services that are required.

I just want to note we have made a tremendous amount of progress over the last 10 years. I think any objective view of the conditions that the parks were in in 1980 compared to the conditions we find them in in 1990 would have to recognize that we have made an immense amount of progress in many, many areas, which is not to say there isn't more to be done. I think the Park Service needs to be commended. I think without breaking our arms, this committee can pat ourselves on the back a little in that regard in having provided the necessary financial support to get that done. The need was immense; the need is immense, but progress has certainly been made.

ADDITIONAL COMMITTEE QUESTIONS

Senator **Reid**. Thank you very much for those comments. Those are an elaboration upon those of Senator Domenici, but I think you get the idea that the committee appreciates the work of the Park Service.

We will submit the balance of the questions from various Senators for you to respond for the record.

[The following questions were not asked at the hearing, but were submitted to the Park Service for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR J. BENNETT JOHNSTON

JEAN LAFITTE NATIONAL HISTORICAL PARK AND PRESERVE

1a. Question: Acadian Cultural Centers. Please provide me with a status report on the construction of the Acadian Cultural Centers in Eunice, Lafayette and Thibodaux. I am particularly interested in knowing the status of the various construction contracts. Which ones have been let? Which ones have yet to be let?

Answer: At Eunice, the renovation of the Seale Building is underway, with completion scheduled for February 1991. The renovation of the Liberty Theater building will be advertised for construction in August 1990. The construction contract should be awarded in September 1990 and construction should begin in November 1990.

At Lafayette, advertisement for Acadian Cultural Center construction should occur in October 1990. The construction contract should be awarded in November 1990.

At Thibodaux, a contract for parking and site improvements has already been awarded, with construction scheduled to begin by the end of May 1990. The renovation of the Percy Lobdell building and construction of the Wetlands Acadian Cultural Center will be advertised for bids in June of 1990 and the construction contract should be awarded in July and actual construction should begin in August of 1990.

Question: 1b. When will construction begin in Lafayette? What is the completion date for each center?

Answer: The Lafayette Acadian Cultural Center should be under construction by December 1990 and should be completed by February 1992. The Thibodaux Cultural Centers should be under construction by August 1990 and completed by September 1991. The Eunice Cultural Center should be under construction by November 1990 and completed in June 1991.

2a. Question: Environmental Education Center. Please provide me with a status report on the construction of the Environmental Education Center in the Barataria Unit. When will construction begin?

Answer: The environmental education center will be advertised for construction bids in July 1990. The construction contract will be awarded in August 1990. Construction should begin in September 1990 and is expected to be completed by August 1991.

2b. Question: What steps have been taken to address the controversy about overnight sleeping accommodations? Does your master plan for the area include space for sleeping accommodations should a decision be made to develop this area as envisioned in the original master plan?

Answer: Overnight sleeping accommodations are listed as an "issue to be addressed" during the General Management Plan Amendment process that is underway for Jean Lafitte National Historical Park and Preserve. The 1982 General Management Plan recommends the development of tent platforms for overnight use by educational groups in the Big Woods Area. The General Management Plan Amendment will review whether facilities should be included for the Big Woods Environmental Center and if so, what type would be appropriate. Existing facilities at nearby Bayou Signette State Park are available for use by Big Woods students. Space for sleeping accommodations would consume a significant portion of very limited remaining bottomland hardwood forest acreage.

3. Question: Interpretation of African-American Culture. Please provide me with a full outline of your plans for interpreting African American/Black culture. As you may know, over one half of the New Orleans population is of African descent and one third of the State's population is of African descent. African Americans have contributed very much to the cultural diversity and development of the delta region.

Answer: Our current efforts for interpreting African-American culture include folklife activities, research projects and several cooperative agreements. Approximately one-third of the park's folklife budget has been obligated for programs related to African-American culture, including storytelling, cooking, music (gospel, jazz, zydeco), art, beadwork demonstrations and interpretation of Mardi Gras Indians. The park also contributes to the sponsorship of various African-American festivals, and will continue to support such activities in the future. The park also has a cooperative agreement with the McDonogh #15 Public School which has a large percentage of African-American students. This agreement develops programs and projects which relate to the cultural diversity and history of the area. A cooperative agreement with the New Orleans Jazz and Heritage Foundation, Inc. develops programs and workshops relating to the unique New Orleans ethnicity. Ranger-led tours on such topics as Creoles of Color, Black Women/White Women are given at the French Quarter Unit. Free Men of Color are represented every year at the anniversary celebration of the Battle of New Orleans at the Chalmette Unit. A member of the staff at the Chalmette Unit gives period dress interpretations on the topic of Free Men of Color.

Recently, the idea of an African-American Cultural Center has been proposed by a member of the Black Creole community. This idea has prompted general interest within the African-American community. The General Management Plan for Jean Lafitte National Historical Park and Preserve will be amended during 1990 and additional cultural centers will be an issue during the amendment process. Public meetings and written comments will provide an opportunity for input by the African-American community.

4. Question: French Quarter Headquarters. What is the status of the Acadian House renovation project in the French Quarter? When do you plan to relocate the park operations to that location?

Answer: Phase I, headquarters construction, will be advertised for construction bids in July 1990. Construction contract will be awarded in August 1990. Construction should begin in September 1990 and is expected to be completed in March 1991. Phase II, interpretive developments, will be advertised for construction bids in October 1990. Construction contract will be awarded in November 1990. Construction should begin in December 1990 and is expected to be completed in August 1991.

National Park Service administrative operations will be transferred shortly after completion of phase I construction in March 1991.

5. Question: Park Visitation. What is current annual visitation at Jean Lafitte? Please provide me with an overall number, as well as numbers for each unit of the park? How does this number compare with visitation one year ago? Five years ago?

Answer: The current annual visitation for Jean Lafitte is 1,417,514 visitors (1989). One and five year comparisons and specifics for each unit follows:

Unit	1989	1988	1985
Barataria	767,889	713,840	628,349
Chalmette	475,102	482,873	290,464
French Quarter	134,694	136,724	112,787
Acadian	39,829	42,758	--
Total	1,417,514	1,376,195	1,031,600

6a. Question: Walking tours. During the past year, I have heard from individuals and organizations in the French Quarter concerning the content and frequency of the walking tours that are conducted by the National Park Service in New Orleans. What steps are being taken to amicably resolve this controversy?

Answer: On May 11, 1990, the New Orleans Chamber of Commerce hosted a meeting between the Tour Guides Association, Friends of the Cabildo, the congressional delegation and the National Park Service to address concerns relating to the National Park Service guided walking tours in the French Quarter. The Tour Guides Association and the Friends of the Cabildo presented their position in opposition to the tours. The National Park Service proposed that concerns related to the tours be addressed through public review during the General Management Plan Amendment process that is now underway for the park. However, the assembled group preferred a quicker remedy. It was agreed that the National Park Service would consider written expressions from local government agencies as well as the congressional delegation regarding the Service's policy on guided walking tours.

6b. Question: How many tours are currently conducted by the National Park Service each day? What is the subject matter of the NPS tours? Please provide me with this information for the tours that are currently being given, the tours that were given one year ago and the tours that were given five years ago.

Answer: Six daily walks are currently offered for the general public:

> City of the Dead (one tour each day) - The development of New Orleans' above-ground burial system, with emphasis on St. Louis Cemetery #1, the city's oldest.
>
> History of New Orleans (Offered three times daily) - A French Quarter walk affording a broad sketch of New Orleans' history emphasizing colonial and early American periods. Special attention is given to diversity of cultures that have contributed to the development of the city and the region.
>
> Faubourg Promenade (one tour each day) - Walking tour of the Garden District which highlights American presence in New Orleans after the Louisiana Purchase and focuses on social and economic factors surrounding development of this still-fashionable 19th-century neighborhood.
>
> Tour du Jour (one tour each day) - A series of walks developed by staff rangers on subjects of interest to them. These walks occur in the French Quarter and each subject walk is offered on an average of once each week. Current tours may include: Creoles of Color, Building New Orleans, Language of New Orleans, Jazz, Spanish Influences, A House Divided, and Lafitte the Legend.

In addition to the regularly scheduled public tours described, special group tours are conducted, by request only, for schools, scouts and other nonprofit groups and generally consist of the same subject matter as the public tours. During 1989 an average of 12 of these tours were conducted each month. In 1985 there was an average of 10 tours each month for special.

As of one year ago, the same six daily offerings were available, but some Tour du Jour subjects were different. They were: Creoles of Color, Language of New Orleans, Voodoo, Architecture of the Vieux Carre, Historical Women of the French Quarter, Day in the Life of a Creole Family and Vieux Carre Potpourri (a spotlight on five ethnic groups in the French Quarter).

Five year ago, the same six daily walking tours were offered, though the Tour du Jour was then known as "French Quarter Jambalaya," and included the following subjects: Disasters of New Orleans, Legends of the French Quarter, Pleasures and Pastimes, Haunts of Jean Lafitte, and Fear and Loathing in New Orleans (racial and ethnic strife in New Orleans history).

6c. Question: Does the Park Service conduct any "special" tours, i.e., Mardi Gras, Halloween, etc.? If so, do these tours duplicate or compete with special tours that are given by private entities in New Orleans?

Answer: Special tours are sometimes conducted in the French Quarter Unit of Jean Lafitte. During the 1990 Carnival season a Tour du Jour entitled "Mardi Gras" was offered, and was conducted a total of seven times over a 4-week period leading up to Mardi Gras. This tour was conducted during the regular Tour du Jour time slot. At one time a walk called "Ghost Stories of the French Quarter" was offered as a Tour du Jour, and some school groups would request that walk around Halloween time. That tour has not been given since 1985. No other special tours as described have been conducted. We are not aware of any Mardi Gras tour given by any private concern in the city with which the previously mentioned Tour du Jour would have competed.

6d. Question: How does the Park Service advertise the availability of its tours?

Answer: Printed schedules of the walking tours are available at the information desk of the French Quarter visitor center of Jean Lafitte National Historical Park and Preserve. Limited quantities of these schedules are provided to hotels and other businesses upon request. The tours are mentioned in writeups about the park in most major tour books on New Orleans, including American Automobile Association and Fodor's guides. Schedules are sometimes available at the tourist information center operated jointly by the State of Louisiana and the New Orleans Convention and Visitors Bureau in Jackson Square. Daily tour schedules are printed in the weekly "Lagniappe" section of the local newspaper. An increasing number of visitors learn of the National Park Service tours via national and international media attention.

POVERTY POINT NATIONAL MONUMENT

7a. Question: What is the status of the National Park Service's efforts to acquire Poverty Point in Louisiana?

Answer: As of now, the State of Louisiana has not completed the donation of the 400-acre State monument to the United States. The primary impediment to completing the donation are covenants and demands for assurances by the State which are legally unacceptable to the Department of the Interior Solicitor's Office. There is also a State constitutional issue prohibiting the donation of State property to the United States.

7b. Question: Have you reached an agreement for the transfer of this monument from the State of Louisiana to the National Park Service? If so, when will the transfer take place?

Answer: No agreement has yet been reached. Representatives of the National Park Service and the State Attorney General met in Baton Rouge, Louisiana, on May 10, 1990, to work on legal problems. A number of questions were resolved, but others still remain. The State Attorney General will soon meet with State Legislative leaders to discuss covenants and demands for assurances by the State which are legally unacceptable to the Department of the Interior. The State constitutional issue prohibiting donations of State property appears to be resolved. A date for the transfer remains unknown.

NATCHITOCHES TRAIL

I have been contacted by citizens in Louisiana who are interested in receiving assistance and guidance from the National Park Service on the best way to interpret and officially recognize the old Natchitoches-Opelousas Road. This road was established in the early 1700's and was the means by which Louis Juchereau St. Denis, a relative of Iberville and Bienville, settled Louisiana west of the Mississippi River. It was the first and, for a while, the only major thoroughfare connecting the three oldest cities of our State (Natchitoches, Opelousas and New Orleans).

8. Question: Please provide me with information on all of the possible ways that this trail could receive some form of Federal recognition. For each option, I am particularly interested in knowing what the role of the National park Service would be, what the role of public and/or private entities would be, what the associated costs would be and what the time table for achieving federal recognition would be.

Answer: The National Trails System Act of 1968, as amended, provides specific guidelines for the establishment of national trails. The law basically authorizes the establishment of national recreation trails, which would provide a variety of outdoor recreation uses in or reasonably accessible to urban areas; national scenic trails to provide for outdoor recreation and for conservation and enjoyment of nationally significant scenic, historic, natural or cultural qualities; national historic trails to follow original trails or routes of travel of national historic significance; and connecting or side trails in conjunction with the above. National recreation trails may be designated by the Secretary of the Interior or the Secretary of Agriculture; national scenic and national historical trails are authorized by Congress.

If Congress authorizes a study for the Natchitoches Trail, the National Park Service would make a determination whether it is feasible and desirable to include the trail as a unit of the National Trails System. A determination of desirability is based upon the national significance of the route and the recreational and/or historic resources along the route. The study would be transmitted to Congress with a recommendation as to the suitability of designation (Federal recognition). The National Park Service Advisory Board will review the study and provide input on its recommendations.

Subsequent to designation of study trails by Congress as components of the National Trails System, a comprehensive plan for the management and use of the trail is required. The content of such a plan includes; objectives and practices in management; identification of natural, historical and cultural resources to be preserved; details of cooperative agreements with State and local governments and private interests; implementation of trail marking; proposed protection for historic and other resource sites of high potential, specific site and general development plans; and the carrying capacity of the trails as well as a plan for implementation of the comprehensive management plan. If the Secretary of the Interior is designated to administer the trail, the National Park Service would normally undertake such a plan.

Because the National Trails Systems Act is predicated on encouraging grassroots efforts in developing, preserving or interpreting national trails, Federal administration is limited to providing for a comprehensive plan; facilitating efforts by local governments, organizations and individuals to manage the trail on non-federally administered areas; providing technical and limited financial assistance; and certifying and monitoring resource activities to assure compliance with planned objectives. If the trail is not suitable for designation, the study would identify other options, including State or local protection and development, nonrecreational trail designation, Federal technical assistance through the Rivers and Trails Conservation Assistance Program, or designation as a commemorative trail or tour route managed by a government or nonprofit entity. Possible National Park Service involvement in trail management can only be gauged upon full assessments of resource values and protection strategies addressed through a feasibility study. The trail feasibility study, by law, can take 3 fiscal years to complete, at an estimated cost of $200,000 to $300,000.

The average comprehensive management trail plan takes 2 years to complete at an estimated cost of $200,000, depending upon the complexity of the issues involved.

QUESTIONS SUBMITTED BY SENATOR PATRICK J. LEAHY

LAND AND WATER CONSERVATION FUND

1. Question: The Administration has shown its commitment to preserving our natural resources and keeping public land open in its FY91 budget request for the Land and Water Conservation Fund. The $250 million request represents a $43 million increase over last year's request.

Because of the Administration's stated mission of undertaking a program to strengthen and preserve the Nation's natural resources, and its willingness to back up this pledge with significant increases in the LWCF, can the Congress consider this a sign that the Administration will discontinue its active opposition to the American Heritage Trust legislation, which will provide a consistent, stable funding mechanism for the LWCF?

Answer: We support the goals of the American Heritage Trust proposal, but cannot support the bill as currently drafted because it would undercut the appropriations and deficit reduction processes. Specifically, the Administration objects to the fact that Senate 370 undercuts the accountability of the annual appropriations process by providing an "automatic appropriation." Also, the Administration objects to the level of funding provided by the bill, which would eventually reach $1 billion annually. For fiscal year 1991, a total of $250 million is being requested for LWCF land acquisition, an increase of $35 million from fiscal year 1990.

2. Question: Grants to States under the Land and Water Conservation Fund are very important to the majority of States, including the State of Vermont. They have been the chief means of acquiring land for important public recreation and conservation uses in every corner of Vermont, and nationwide. While I am encouraged that the Administration would expand land acquisition under the "America the Beautiful" initiative, I am disturbed that grants to States for land acquisition are not funded in this budget, nor have they been included in the administration's budget for several years. How does the Administration justify its unwillingness to fund LWCF grants to States?

Answer: The Service is certainly aware of the values of the LWCF grants program and all that it has accomplished in the first 25 years of the fund. The decision not to request fiscal year 1991 funding was based essentially on the budget deficit, not on the merits of the State grants program. Because of limited budgetary resources, priority was given to the Federal side of the Land and Water Conservation Fund. Fiscal year 1992 budget priorities are now under review. Secretary Lujan has indicated that the door is open for the future restoration of State grants funding, but decisions for each fiscal year must be made based on assessments of the resources available and the usual priority setting process, which will not be completed until next January.

3. Question: I have attached my March 29, 1990, letter to John M. Morehead, Associate Director for Operations of the NPS, and Mr. Morehead's reply of April 13, relative to the Service's involvement in an Environmental Impact Statement (EIS) and professional mediation on the matter of the Appalachian Trail corridor in the Killington and Pico Peaks area of Vermont.

This matter is the subject of language in P.L. 101-121, the FY 1990 appropriations law for Interior and Related Agencies. I appreciate Mr. Morehead's response that the NPS expects "to be able to fund mediation costs out of monies already identified for the environmental impact statement work." I also appreciate his willingness to keep me informed and to invite the continued participation of me and my staff.

LETTER FROM SENATOR PATRICK J. LEAHY

March 29, 1990

John M. Morehead
Associate Director for Operations
National Park Service
C St. between 18th and 19th Sts., NW
Washington, D.C. 20240

Dear Mr. Morehead:

I am writing with reference to language contained in P.L. 101-121, the Fiscal Year 1990 appropriations statute for Interior and Related Agencies, that directs the National Park Service to conduct an Environmental Impact Statement (EIS) in Vermont.

Specifically, the statutory language directs the NPS to prepare an EIS "that evaluates alternative levels of development within the Appalachian Trail corridor between the Shrewsbury-Mendon town line, on the south, and the junction of the Appalachian and Long Trails north of Sherburne Pass, on the north, in Rutland County, Vermont."

It is my understanding that, after some difficulties, the NPS is beginning to proceed on the scoping phase of this EIS. I look forward to the Service moving forward expeditiously on this process.

It is my chief purpose in this letter, however, to explore with you the prospects for integrating professional environmental mediation into the EIS process. Over the past several months parties interested in the future of the section of the Appalachian Trail in question, including Vermont Senator James Jeffords and me, and representatives of the State of Vermont, Killington Ltd. and several concerned environmental organizations, have conducted informal discussions centering on what constitutes adequate protection for the Trail.

In these discussions, basic disagreements have continued on key questions surrounding the Trail protection issue. It is clear to me that these questions will only be satisfactorily resolved by the EIS process. However, there is one area on which all parties to these discussions have agreed--that involving a professional mediator, as soon as possible, is a desirable step to take. I agree with all principal parties that professional mediation would be an important complement to the EIS process. Mediation, I believe, would not only potentially improve the EIS process, but would streamline it and lower its cost.

It is my view that while the statute in question does not specifically address professional mediation as part of the EIS process, it certainly allows it. And I believe that mediation may prove to be an integral part of an EIS process that is more expeditious, comprehensive and cost effective than it might otherwise be. Accordingly, we should make every effort to commence mediation.

Specifically, I believe that mediation focusing on the scope of the EIS is a sound starting point for this process. This approach is logical, is supported by most if not all of the parties involved in recent discussions, and certainly complements the EIS process.

I want to urge active support and participation from the NPS in the EIS/mediation process. What is the Service's position on this matter?

Obviously, there are costs associated with professional environmental mediation. The parties involved do not have resources to pay for mediation, and it may be inappropriate for them to do so. I understand that the NPS has allocated some $50,000 from existing funds to commence the EIS, and I appreciate this support.

I ask that the NPS find additional resources from existing funds, during the 1990 fiscal year, for mediation efforts that should commence as soon as possible. I believe that it is reasonable and appropriate for the Service to do so. By funding and actively participating in mediation, the Service would be going far toward forging a compromise that is acceptable to all parties--and that would ultimately save time and funds on the EIS process.

I envision an EIS/mediation process that will systematically evaluate a range of complex issues, involve broad public participation, and proceed expeditiously. I urge the NPS to endorse and to fund the professional environmental mediation efforts that I have proposed here. I look forward to your timely reply on this. Thank you.

Sincerely,

Patrick Leahy

PATRICK LEAHY
United States Senator

LETTER FROM JOHN M. MOREHEAD

APR 13 1990

Honorable Patrick J. Leahy
United States Senate
Washington, D.C. 20510

Dear Senator Leahy:

Thank you for your letter of March 29, 1990, concerning professional mediators as part of the environmental impact statement preparation process to assess various levels of development within the Appalachian Trail corridor in the Killington Peak and Pico Peak areas of Vermont.

We agree that mediation would be helpful to identify environmental concerns and, hopefully, identify preferred options for resolving corridor development issues.

During the March 29, 1990, meeting with Senator Jeffords and John Romano, of your staff, John Byrne, the Project Manager for the Appalachian National Scenic Trail, related to our interest in pursuing mediation and he is now in the process of developing an approach that will be expeditious and effective. As part of this process, we will keep your office informed and invite your continued participation in the ensuing mediation discussions.

We expect to be able fund mediation costs out of moneys already identified for the environmental impact statement work.

Your interest and concern in this important resource management matter is greatly appreciated.

Sincerely,

John M. Morehead

John M. Morehead
Associate Director, Operations

How much has the Service set aside for work on this EIS and professional mediation work for FY 1990? From where in the NPS budget are these funds being drawn? Should EIS and mediation work continue into FY 1991, which cannot be ruled out as we are in the third quarter of the present fiscal year, how much will the Service have available in the next fiscal year for this matter?

I would appreciate receiving an update on the Service's activities on this matter in mid-May of this year, and on a regular basis until the Service's involvement has terminated. Thank you.

Answer: Funds totalling $50,000 have been programed for the EIS work, including $7,500 for professional mediation services. Funds were made available from within overall park management funds.

An additional $121,000 will be required in fiscal year 1991 to complete the EIS work in Vermont on the Killington and Pico Peak areas. If this funding were not appropriated, funds would likely have to be made available from within overall park management funding levels.

LAKE CHAMPLAIN

4. Question: In February of this year I introduced, along with Senators Jeffords, D' Amato and Moynihan, the Lake Champlain Special Designation Act. The goal of the Act, over the next five years, is to stimulate both federal and bi-state involvement in anti-pollution research, monitoring and implementation on this large, significant international lake.

I believe that this legislation has a reasonably good chance of passage in this Congress. Under the Act, several federal agencies will play an active role in both planning and implementation strategies on Lake Champlain.

Given the Service's past involvement in historic preservation activities in and around the lake, do you agree with me that the NPS is one of the agencies that can and should participate in planning and implementation work if this legislation passes? I would appreciate hearing the Service's view on this.

Answer: The Park Service has no position on the referenced bill; it is under review in the Department and a Departmental position is being formulated.

INTERNATIONAL PARK AFFAIRS

5. Question: It is my understanding that the major source of funding for the United States/United Kingdom Countryside Stewardship program has come from the UK through the Countryside Stewardship Commission of England and Wales. Since this has been the case in both the 1987 and 1989 exchanges, do you feel that it would be appropriate for the US, through the International Park Affairs account, to reciprocate by funding the 1991 exchange in the spirit of the July 1986 Memorandum of Understanding between the NPS and the Countryside Stewardship Commission?

Answer: The National Park Service and the Countryside Commission have enjoyed years of mutually satisfactory relationship, even preceding the memorandum of understanding of 1986. The exchange program, to date, has relied heavily on funding from the Countryside Commission, participants and generous contributions from private individuals and organizations. The 1989 exchange, including Park Service sponsorship of and participation in an international seminar on "The Management of Protected Landscapes" conducted in the United Kingdom, is estimated to have cost about $100,000, of which the Countryside Commission paid in excess of $30,000. The majority of the balance was raised through donations or paid by the participants. We believe it would be appropriate, in the spirit of the memorandum of understanding, for the United States to reciprocate by hosting the 1991 exchange, however, this could not be accomplished without the elimination of other worthy activities, currently programmed within the funding available to the Office of International Affairs.

QUESTIONS SUBMITTED BY SENATOR DENNIS DeCONCINI

PARK SERVICE ORGANIZATION

Director Ridenour, in Director Mott's final appearance before the committee last year, I raised the issue of the Park Service's organizational structure with him. Specifically, I expressed concerns that Arizona is under the jurisdiction of three Park Service Regions, the Rocky Mountain, Western and Southwest. I further indicated that it seems to me that in some Regions throughout the country, there appears to be no geographic commonality. For example, the National Park Service units in Louisiana are under the jurisdiction of the Southwest Region out of Santa Fe, New Mexico.

Director Mott indicated that a task force was formed in 1987 and had recommended that certain boundary realignments, which include Arizona, could be made that would "improve the Service's organization based on geographic, cultural and ecosystem factors." However, Director Mott deferred the implementation of these recommendations in order to give you an opportunity to review them.

1a. Question: Have you had an opportunity to review the task force's recommendations concerning the realignment of Park Service regional boundaries? If so, would you agree with these recommendations?

Answer: I have reviewed the task force recommendations including the realignment of Regional boundaries. No decision has yet been made on the realignment recommendations.

1b. Question: Please provide the committee with the task force recommendations on Regional boundaries.

Answer: The task force recommendations on Regional boundaries were to realign:

Arizona to Southwest Region
Louisiana to Southwest Region
Kentucky to Midwest Region
Montana to Pacific Northwest Region
Antietam National Battlefield, Harpers Ferry National Historical Park, and Manassas National Battlefield Park to Mid-Atlantic Region

2. Question: When do you anticipate acting on these recommendations?

Answer: Many of the task force recommendations have been implemented however, those concerning Regional alignment were placed on hold until the new administration could review them. I anticipate completing my review of this issue within 6 months.

3a. Question: How much will it cost to implement these recommendations?

Answer: No comprehensive cost study has been done on the implementation of these recommendations.

3b. Question: Has the Park Service had the opportunity to undertake a cost/benefit analysis of the task force's recommendations on regional boundaries? If not, why not and when do you anticipate doing one?

Answer: No cost/benefit analysis has been completed at this time. The advantages or disadvantages of realignment have to be measured in more than economic terms. The span of control issue (the number of superintendents reporting to a Regional Director) was a principal determinant in the directions given to the task force. From my initial review it appears that the proposed realignment does not substantially alter the differences between Regions.

HISTORIC PRESERVATION ON INDIAN LANDS

Last year, language was included in the Committee Report directing the Park Service to "determine, and report to the committee on the funding needs for the management, research, interpretation, protection and development of sites of historical significance on Indian lands throughout the nation." This report was to be provided to the committee by March of this year.

4. Question: What is the status of the report? When do you anticipate being able to provide it to the committee?

Answer: On March 14, 1990, the National Park Service completed a first draft of the report and distributed it to tribal members who provided testimony, State Historic Preservation Officers, National Park Service Regional Offices, representatives of the Bureau of Indian Affairs, and other interested parties. The comments received are now being incorporated into the final report. Due to the amount of time need to address all of the comments received and subsequent review, we anticipate providing the report to the committees by August 1990.

"LEGACY 99"

I am pleased to see the Service's emphasis on reducing the backlog of rehabilitation and maintenance projects as evidenced by the Legacy 99 program. As you know, I have long been concerned about the deplorable housing conditions we force Park Service employees and their families have to live in.

5. Question: What percentage of the Legacy 99 funding will go to renovating and rehabilitating employee housing? Please provide a breakdown on how these funds are to be distributed by Park Service unit.

Answer: The fiscal year 1991 budget proposes $364.2 million for Legacy 99 program elements. The portion of this funding specifically identified toward rehabilitating employee housing consists of two line item construction projects (Gates of the Arctic National Park and Preserve, package 106, construct employee housing, Bettles, Coldfoot and Anaktuvuk, $1,764,000 and Yosemite National Park, package 504, construct employee housing, El Portal, $4,940,000) and the housing repair projects funded under the "Emergency, Unscheduled and Housing Projects" activity of the Construction appropriation. The percentage of total Legacy 99 funding devoted to employee housing is 4 percent.

The listing by park and area follows:

NATIONAL PARK SERVICE
HOUSING REPAIR REHAB PROJECTS
FY 90

PARK/STATE	PROJECT	HOUSING NUMBER	FUNDING
Bering Land Bridge NP (Alaska)	Rehabilitate 4 units	2,3,4,5,	55,000
Denali NP (Alaska)	Trailer replacement	multi units	233,000
Gates of the Arctic NP (Alaska)	Complete rehab 4 units		30,000
Glacier Bay NP (Alaska)	Asbestos abatement/rehab	5 units	60,000
Regionwide - Alaska	Assessment/Planning		88,000
Assateague Island NS (Maryland/Virginia)	Replace 3 obsolete trailers	66,67,15	150,000
Shenandoah NP (Virginia)	Replace 3 obsolete trailers	16,25,34	167,000
Regionwide - Mid-Atlantic	Planning/technical support		10,000
Isle Royale NP (Michigan)	Rehab Dorms, Mott Island		674,000
Isle Royale NP (Michigan)	Housing Replacement Planning		60,500
Prince William Forest Pk (Virginia)	Rehab 1 housing unit	02	77,000
Acadia NP (Maine)	Rehab Sunset House	303	80,000
Acadia NP (Maine)	Planning trailer replacement	01,02	30,000
Boston NHP (Massachusetts)	Exterior rehab barracks		35,000
Edison NHS (New Jersey)	Replace roof	15	20,000
Fire Island NS (New York)	Rehab Talisman apts Phase II	154,155	60,000
Minuteman NHS (Massachusetts)	Repair foundations and steps	29,4	20,000
Morristown NHP (New Jersey)	Adaptive rehab phase II	45	140,000
Roosevelt/Vanderbilt NHS (New York)	Rehab stone house	40	12,000
Roosevelt/Vanderbilt NHS (New York)	Upgrade kitchens	20,40	25,000

NATIONAL PARK SERVICE
HOUSING REPAIR REHAB PROJECTS
FY 90

PARK/STATE	PROJECT	HOUSING NUMBER	FUNDING
Sagamore Hill NHS (New York)	Rehab Old Orchard Quarters	2B	11,000
Crater Lake NP (Oregon)	Rehab 7 Steele Circle houses	7 units	408,000
Olympic NP (Washington)	Planning/design trailer replacement	15 units	100,000
Mount Rainier NP (Washington)	Planning for Dorm Rehabilitation, Paradise		116,500
Badlands NP (South Dakota)	Rehab 6 permanent housing units		123,000
Bryce Canyon NP (Utah)	Rehab dorm		48,000
Glacier NP (Montana)	Rehab housing - east and west	multi units	300,000
Grand Teton NP (Wyoming)	Rehab units - Moose & Beaver	multi units	290,000
Rocky Mountain NP (Colorado)	Repair 7 Mission-66 units		130,000
Yellowstone NP (Wyoming)	Rehab 50 units - Phase II		420,000
Zion NP (Utah)	Rehab seasonal dorms		100,000
Regionwide-Rocky Mountain	Replace trailers/rehab seasonal units		239,000
Big Cypress NP (Florida)	Rehab 24 units	multi units	380,000
Biscayne NP (Florida)	Rehab house Adams Key	102	35,000
Everglades NP (Florida)	Rehab 6 seasonal units	multi units	65,000
Cape Hatteras NS (North Carolina)	Rehab 7 units/4 historic cabins	multi units	167,000
Cape Hatteras NS (North Carolina)	Cape Hatteras Housing Replacement Planning		113,000
Horseshoe Bend NMP (Alabama)	Replace trailer	B-3	35,000
Regionwide-Southwest	Assessment/Planning	multi units	80,000
Hubbell Trading Post NHS (Arizona)	Planning-DSC/Contract admin	multi units	150,000

NATIONAL PARK SERVICE
HOUSING REPAIR REHAB PROJECTS
FY 90

PARK/STATE	PROJECT	HOUSING NUMBER	FUNDING
Bandelier NM (New Mexico)	Trailer replacement	MH136	80,000
Big Bend NP (Texas)	Trailer replacement 4 units	6,9,17,418	186,000
Grand Canyon NP (Arizona)	Replace 3 trailers		340,000
Grand Canyon NP (Arizona)	Rehab 6 houses		80,000
Grand Canyon NP (Arizona)	Mission 66 rehab completion		25,000
Grand Canyon NP (Arizona)	Grand Canyon Community Planning		108,100
Yosemite NP (California)	Replace 2 trailers		310,000
Yosemite NP (California)	Rehab for health & safety	4 units	100,000
Organ Pipe Cactus NM (Arizona)	Trailer replacement completion		40,000
Lava Beds NM (California)	Trailer replacement completion	#7	40,000
Channel Islands NP (California)	Replace obsolete housing	8120-0003	160,000
Santa Monica Mountains NRA (California)	Rehab Cirle X housing	CX	30,000
Point Reyes NS (California)	Rehab housing	159	30,000
Saguaro NM (Arizona)	Replace trailer	1149	110,000
Death Valley NM (California)	Rehab for health & safety	multi units	80,000
Yosemite NP (California)	Assessment/Planning		70,000
Death Valley NM (California)	Assessment/Planning		70,000
Service-Wide	Mission 66 Housing Rehabilitation Manual		97,400
Service-Wide	Park Housing Evaluation Manual		75,000

NATIONAL PARK SERVICE
HOUSING REPAIR REHAB PROJECTS
FY 90

PARK/STATE	PROJECT	HOUSING NUMBER	FUNDING
Service-Wide	Regional Housing Inspection & Training		135,000
Service-Wide	WASO Administrative Support		404,000
GRAND TOTAL HOUSING INITIATIVE FUNDS (Post-Sequester) FY 1990:			7,907,500

VISIBILITY PROTECTION

As you know Director Ridenour, the Senate recently completed action on the Clean Air Act amendments of 1989. A great deal of attention was paid to the visibility protection component of that legislation.

6a. Question: Mr. Director, would you please bring the committee up to speed with the Park Service's activities to protect visibility in our national parks. A great deal of attention has been paid to the Park Service's efforts at the Grand Canyon. What are the other Parks where the Service is undertaking efforts to protect visibility?

Answer: The Service currently monitors visibility in 54 areas. In some cases these monitoring sites have been in operation for over 10 years. The following tables contain information on the locations of each monitoring site, the equipment used, and the length of time each site has been in operation. The monitoring data have been used to identify the pollutants, sources, and source regions which cause or contribute to visibility impairment. The Service's scientists have published over 100 technical papers on various aspects of our visibility monitoring and research program. In addition to Grand Canyon National Park, the Service has also identified the geographic regions of the country most likely responsible for high sulfate concentrations in other Colorado Plateau national parks like Canyonlands, Bryce Canyon, Capitol Reef, Zion, Mesa Verde (Utah and Colorado); Shenandoah NP (Virginia); Big Bend NP (Texas); Rocky Mountain NP (Colorado); Great Smoky Mountains NP (Tennessee and North Carolina), and Acadia NP (Maine). The Service will also be undertaking a study this summer to identify contributions of several sources to visibility impairment at Mount Rainier, North Cascades, and Olympic National Parks (Washington).

The Service has no authority over the sources of air pollution which degrade visibility in our national parks. Instead, our ability to protect visibility depends on being able to provide the Environmental Protection Agency (EPA) and responsible State agencies with the information they need to develop visibility protection plans. As a result, the Service shares the information we have acquired with external agencies who have the legal responsibility to develop plans to remedy and prevent visibility impairment in national parks. States are required to consult with the Park Service when developing visibility protection plans or permitting new air pollution sources. Relying heavily on National Park Service information, the States and EPA have taken actions in cases where visibility impairment can be attributed to a specific existing or proposed source. However, the States and EPA have declined, for the most part, to address the existing regional haze pollution identified by the National Park Service until such time as EPA develops regulations for this program. The National Park Service has kept EPA informed of the advances in methodology and understanding gained through the Service's visibility research efforts on regional haze impairment.

The Service has made substantial efforts to integrate visibility protection concerns into park planning documents, interpretive activities, and Servicewide training programs. For example, exhibits depicting and explaining the causes and effects of visibility impairment have been constructed for 37 parks, and numerous parks have prepared special "site bulletins" or audio-visual programs addressing air quality concerns.

NATIONAL PARK SERVICE TRANSMISSOMETER MONITORING SITES

UNIT	DATE INSTALLED	DATE REMOVED	NO. OF DATA YRS.
Acadia NP	Nov-87		2.5
Badlands NM	Jan-88		2.4
Bandelier NM	Oct-88		1.6
Big Bend NP	Nov-88		1.5
Bridger Wilderness (USFS)	Jul-88		1.9
Canyonlands NP	Dec-86		3.5
Chiricahua NM	Jan-89		1.4
Crater Lake NP	Sep-88		1.7
Glacier NP	Jan-89		1.4
Grand Canyon NP	Dec-86		3.5
Guadalupe Mountains NP	Dec-88		1.5
Mesa Verde NP	Sep-88		1.7
Petrified Forest NP	Apr-87		3.1
Pinnacles NM	Mar-88		2.2
Rocky Mountain NP	Dec-87		2.5
San Gorgonio Wilderness (USFS)	Apr-88		2.1
Shenandoah NP	Mar-88		2.2
Tonto NM	Apr-89		1.1
Voyageurs NP	Jun-88		2.0
Yellowstone NP	Aug-89		0.8
Yosemite NP	Sep-88		1.7

NATIONAL PARK SERVICE TELERADIOMETER MONITORING SITES

UNIT	DATE INSTALLED	DATE REMOVED	NO. OF DATA YRS.
Acadia NP	Dec-83	Feb-86	2.2
Bandelier NM	Sep-78	Sep-84	6.0
Big Bend NP	Sep-78	Feb-86	7.4
Black Canyon of the Gunnison	Feb-85	Mar-86	1.1
Bryce Canyon NP	Dec-82	Feb-86	3.2
Canyonlands NP	Dec-82	Feb-86	3.2
Capitol Reef NP	Dec-82	Feb-86	3.2
Capulin Mountains NM	Apr-80	Feb-86	5.8
Carlsbad Caverns NP	Apr-80	Aug-80	0.3
Chaco Culture NHP	Sep-78	Feb-86	7.4
Chiricahua NM	Jun-81	Feb-86	4.7
Colorado NM	Jul-80	Feb-82	1.6
Crater Lake NP	May-82	May-85	3.0
Craters of the Moon NM	Jun-83	Sep-84	1.3
Death Valley NM	Feb-80	Feb-86	6.0
Dinosaur NM	Dec-78	Feb-86	7.2
Glacier NP	Apr-83	Feb-86	2.8
Glen Canyon NRA	Aug-83	Feb-86	2.5
Grand Canyon NP	Jan-79	Feb-86	7.1
Grand Teton NP	Jul-80	Feb-86	5.6
Great Basin NP	Jun-82	Feb-86	3.7
Great Smoky Mountains NP	Nov-83	Feb-85	1.3
Guadalupe Mountains NP	Apr-82	Feb-86	3.8
Joshua Tree NM	Jun-82	Feb-83	0.7
Lake Mead NRA	Mar-83	Feb-86	2.9
Lassen Volcanic NP	Aug-82	Nov-83	1.3
Lava Beds NM	Jun-83	Feb-86	2.7
Mesa Verde NP	Jul-78	Feb-86	7.6
Navajo NM	Sep-78	Mar-83	4.5
Olympic NP	Apr-80	Oct-81	1.5
Rocky Mountain NP	Jan-81	Jun-85	4.4
Shenandoah NP	Mar-83	Oct-85	2.6
Theodore Roosevelt NP	Feb-79	Feb-86	7.0
Wind Cave NP	Feb-79	Feb-86	7.0
Wupatki NM	Mar-78	Jan-83	4.8
Yosemite NP	Sep-82	Jan-84	1.3
Zion NP	Nov-83	Jul-85	1.7

NATIONAL PARK SERVICE FINE PARTICLE SITES

UNIT	FINE PART. INSTALLED	FINE PART. REMOVED	FINE PART. DATA YEARS
Acadia NP	Sep-85		4.7
Arches NP	Jan-83		7.4
Badlands NP	Oct-87		2.6
Bandelier NM	Jan-83		7.4
Bering Land Bridge N Pres.	Apr-87		3.1
Big Bend NP	Jul-82		7.9
Bridger Wilderness (USFS)	Jul-87		2.9
Bryce Canyon NP	Sep-79		10.7
Buffalo NR	Dec-83		6.5
Canyonlands NP	Sep-79		10.7
Capulin Mountains NM	Jan-83	Mar-86	3.2
Carlsbad Caverns NP	Aug-84	Dec-84	0.3
Chaco Culture NHP	Jan-83	Mar-86	3.2
Chiricahua NM	Jun-82		8.0
Crater Lake NP	Oct-82		7.6
Craters of the Moon NM	Jan-83	Mar-86	3.2
Death Valley NM	Jan-83	Mar-86	3.2
Denali NP & Pres.	Aug-86		3.8
Dinosaur NM	Jan-83	Mar-86	3.2
Gates of the Arctic	Jun-87		3.0
Glacier NP	Jul-82		7.9
Grand Canyon NP	Aug-79		10.8
Grand Teton NP	Jan-83	Mar-86	3.2
Great Basin NP	Jan-83	Mar-86	3.2
Great Sand Dunes NM	Oct-87		2.6
Great Smoky Mountains NP	Aug-82		7.8
Guadalupe Mountains NP	Feb-83		7.3
Hawaii Volcanoes NP	Oct-86		3.6
Isle Royale NP	Jul-87		2.9
Jarbidge Wilderness (USFS)	Oct-87		2.6
Joshua Tree NM	Jan-83	Dec-85	2.9
Lassen Volcanic NP	Feb-83		7.3
Lava Beds NM	Feb-83	Mar-86	3.1
Mesa Verde NP	Oct-82		7.6
Mount Rainier NP	Jul-83		6.9
North Cascades NP	Aug-84	Mar-86	1.6
Northwest Alaska Area	Jun-86		4.0
Petrified Forest NP	Nov-86		3.5
Pinnacles NM	Nov-86		3.5
Point Reyes NS	Oct-87		2.6
Redwood NP	Oct-87		2.6
Rocky Mountain NP	May-82		8.0
Saguaro NM	Jul-85		4.9
San Gorgonio Wilderness (USFS)	Oct-87		2.6
Shenandoah NP	Mar-82		8.2
Superstition Mountains (USFS)	Oct-87	Mar-88	0.4
Theodore Roosevelt NP	Jan-83	Mar-86	3.2
Tonto NM-A	Jan-83	Nov-84	1.8
Tonto NM-B	Apr-88	May-90	2.1
Voyageurs NP	Jul-85		4.9
Weminuche Wilderness	Oct-87		2.6
Wind Cave NP	Jan-83	Mar-86	3.2
Wrangell-St. Elias NP & Pres.	Jun-87		3.0
Yellowstone NP	Oct-86		3.6
Yosemite NP	Sep-82		7.7
Yukon-Charlie Rivers N Pres.	Apr-86		4.1

NATIONAL PARK SERVICE CAMERA MONITORING SITES

UNIT	CAMERA INSTALLED	CAMERA REMOVED	CAMERA DATA YRS.
Acadia NP	Jan-80		10.4
Arches NP	May-80		10.0
Badlands NP	Aug-87		2.8
Bandelier NM	Oct-82		7.6
Big Bend NP	Sep-81		8.7
Black Canyon of the Gunnison	Feb-85		5.3
Bridger Wilderness (USFS)	Sep-86		3.7
Bryce Canyon NP	Dec-82		7.5
Buffalo NR	Jul-82		7.9
Canyonlands NP	Dec-82		7.5
Capitol Reef NP	Jun-84		6.0
Capulin Mountains NM	Aug-82		7.8
Carlsbad Caverns NP	Jun-86		4.0
Chaco Culture NHP	Oct-82		7.6
Chiricahua NM	Jun-81		9.0
Colorado NM	Jul-81		8.9
Crater Lake NP	Aug-82		7.8
Craters of the Moon NM	Jun-83		7.0
Death Valley NM	Jan-82		8.4
Dinosaur NM	Sep-79		10.7
Everglades NP	Jul-82		7.9
Glacier NP	Jul-82		7.9
Glacier Bay	Jun-86	Sep-86	0.3
Glen Canyon NRA	Mar-84		6.2
Grand Canyon NP	Oct-79		10.6
Grand Teton NP	Jul-80		9.9
Great Basin NP	Jun-82		8.0
Great Sand Dunes NM	Jul-87		2.9
Great Smoky Mountains NP	Jun-80		10.0
Green River, WY	Jun-87		3.0
Guadalupe Mountains NP	Sep-83		6.7
Haleakala NP	Jul-87		2.9
Hawaii Volcanoes NP	Oct-86		3.6
Isle Royale NP	Jul-87		2.9
Jarbidge Wilderness (USFS)	Sep-86		3.7
Joshua Tree NM	Jun-82		8.0
Lake Mead NRA	May-84		6.0
Lassen Volcanic NP	Jul-82		7.9
Lava Beds NM	Jun-83		7.0
Mesa Verde NP	Sep-78		11.7
Mount Rainier NP	Jul-83		6.9
Navajo NM	Mar-80	Jun-86	6.3
North Cascades NP	Jun-86		4.0
Olympic NP	Apr-80		10.1
Petrified Forest NP	Jul-86		3.9
Pinnacles NM	Aug-86		3.8
Point Reyes NS	Jun-87		3.0
Redwood NP	Jun-87		3.0
Rocky Mountain NP	Aug-86		3.8
San Gorgonio Wilderness (USFS)	Aug-86		3.8
Shenandoah NP	Mar-83		7.2
Superstition Mountains (USFS)	Jun-86	Oct-87	1.3
Theodore Roosevelt NP	Sep-79		10.7
Tonto NM	Dec-88		1.5
Voyageurs NP	Oct-86		3.6
Weminuche Wilderness	Jul-86		3.9
Wind Cave NP	Jun-82		8.0
Yellowstone NP	Sep-86		3.7
Yosemite NP	Sep-82		7.7
Zion NP	Jul-85		4.9

NATIONAL PARK SERVICE - AIR QUALITY MONITORING

04-May-90

PARK	--CAA--		T	N	C	FP	MET	SO_2	O_3	TSP	NO_2	W	COMMENTS
Acadia NP	I		X		X	I		X	X			X	
Arches NP	I				X	I	X	X	X				Transmissometer at Canyonlands NP
Badlands NP	I		X		X	I	X	X	X				
Bandelier NM	I		X		X	I	X	X	X				SO_2, O_3 Operated by Los Alamos Lab
Bering Land Bridge N Pres		II				S							
Big Bend NP	I		X		X	I	X+	X+	X+			X	
Big Thicket NP		II					X	X	X				
Black Canyon of the Gunnison NM	I				X								BLM Funding
Bryce Canyon NP	I				X	I	X					X	
Buffalo National River		II			X					X		X	
Canyonlands NP	I		X		X	I							
Cape Cod NS		II							X			X	State/NPS Operated
Capitol Reef NP	I				X								
Capulin Volcano NM		II			X							X	
Carlsbad Caverns NP	I				X								FP, SO_2, O_3 at Guad. Mts. NP
Chaco Culture NHP		II			X								
Channel Islands NP		II						X	X		X		Operated by Ventura County
Chiricahua NM	I		X		X	I	X	X	X				NDDN
Colorado NM		II			X		X	X	X	X			
Congaree Swamp NM		II						X	X	X	X		Operated by State Agency
Crater Lake NP	I		X	X	X	I							(Park - N)
Craters of the Moon NM	I				X							X	
Cuyahoga Valley NRA		II					X	X	X				
Death Valley NM		II			X		X			X			
Denali NP	I				X	I	X	X	X			X	
Dinosaur NM		II			X		X						
Everglades NP	I					I	X	X	X			X	
Gates of the Arctic NP & Pres		II				S							
Glacier NP	I		X		X	I	X	X	X			X	NDDN
Glen Canyon NRA		II			X							X	
Grand Canyon NP	I		X		X	I	X	X	X			X	NDDN-NPS Comparability Site
Grand Teton NP	I				X								
Great Basin NM		II			X							X	
Great Sand Dunes NM	I				X	I	X	X	X				
Great Smoky Mountains NP	I			X	X	I	X		X	X		X	
Guadalupe Mountains NP	I		X		X	I	X	X	X			X	
Haleakala NP	I				X	I	X+	X+	X+				
Hawaii Volcanoes NP	I		X+		X	I	X	X	X				H_2S Also
Indiana Dunes NL		II					X	X	X	X		X	
Isle Royale NP	I				X	I	X	X	X			X	
Joshua Tree NM	I				X		X		X				
Katmai NP & Pres		II				S							
Kings Canyon NP	I								X				
Lake Mead NRA		II			X								
Lassen Volcanic NP	I				X	I	X	X	X				
Lava Beds NM	I				X								
Mammoth Cave NP	I						X		X	X			
Mesa Verde NP	I		X		X	I						X	
Mount Rainier NP	I			X+	X	I							
National Mall		II			X	I							
North Cascades NP	I				X							X	
Northwest Alaska Area		II				S							
Olympic NP	I				X			X	X	X		X	
Organ Pipe Cactus NM		II										X	
Petrified Forest NP	I		X		X	I	X	X	X				
Pinnacles NM	I		X		X	I	X	X	X				
Point Reyes NS	I				X	I	X	X	X				
Redwood NP	I				X	I	X	X	X				
Rocky Mountain NP	I		X		X	I	X		X			X	
Saguaro NM	I				X	I	X	X	X				
Santa Monica Mountains NRA		II							X				
Sequoia NP	I					S	X		X	X		X	FP Funded by ARB
Shenandoah NP	I		X		X	I	X	X	X			X	NDDN-NPS Comparability Site
Steamtown NHS		II				S	X	X					
Theodore Roosevelt NP	I				X		X	X	X	X		X	Operated by State; also H_2S
Tonto NM		II	X		X	I							Substitution for USFS IMPROVE Site
Virgin Islands NP	I				X+	I-							
Voyageurs NP	I		X		X	I	X	X	X				
Wind Cave NP	I				X								
Wrangle/St. Elias NP & Pres		II				S							
Yellowstone NP	I		X		X	I	X	X	X			X	
Yosemite NP	I		X		X	I	X		X	X		X	
Yukon-Charlie Rivers N Pres		II				S	X						
Zion NP	I				X								
TOTAL MONITORING SITES	48	26	20	3	55	43	39	33	41	11	2	27	

C = CAMERA
CAA = CLEAN AIR ACT CLASSIFICATION
FP - FINE PARTICLE
I = IMPROVE PARTICLE SAMPLER
(I- TO BE INSTALLED)

MET = METEOROLOGICAL STATION
N = NEPHELOMETER
NO_2 = NITROGEN DIOXIDE
O_3 = OZONE
S = STACKED FILTER UNIT

SO_2 = SULFUR DIOXIDE
T = TRANSMISSOMETER
TSP = TOTAL SUSPENDED PARTICULATE
W = PRECIPITATION CHEMISTRY
X+ = TO BE INSTALLED

6b. Question: Is it correct to say that the visibility protection efforts at the Grand Canyon are further along than any other Park?

Answer: In general, visibility efforts are further along at the Grand Canyon National Park than any other park, but the efforts directed toward understanding and addressing visibility concerns at the Grand Canyon will also benefit other parks in the Colorado Plateau area which have similar problems caused largely by the same sources and source areas. In addition, many of the techniques developed and successfully applied in the recent Grand Canyon winter studies will have Servicewide applicability, and many (with the exception of the very expensive tracer release) will be applied in other parks to identify causes of visibility impairment.

7. Question: How would you define the role of the Park Service in the protection of visibility in our National Parks?

Answer: The National Park Service has a responsibility to protect park resources from the adverse effects of air pollution under both the 1916 organic act for the Park Service and the Clean Air Act. The Clean Air Act specifically gives Federal land managers an affirmative responsibility to protect air quality related values, including visibility, in class I areas. For these reasons, the Park Service seeks to perpetuate the best possible air quality in parks and assumes an aggressive role in promoting and pursuing measures to safeguard these values from the adverse impacts of air pollution.

The Clean Air Act and implementing regulations promulgated by the Environmental Protection Agency give Federal land managers the following responsibilities or opportunities to promote visibility protection goals: (1) identification of class I areas where visibility is an important value; (2) identification of integral vistas; (3) consultation with responsible regulatory agencies during the development of visibility protection plans; (4) identification of areas with existing visibility impairment; (5) identification of sources suspected of causing or contributing to impairment; (6) concurrence or nonconcurrence on any EPA decisions to exempt a source from best available retrofit technology requirements; and (7) assessment of whether new major stationary sources or major modifications might have an adverse impact on air quality related values, including visibility, in class I areas.

To carry out these responsibilities, the Park Service has been collecting information on visibility conditions and trends, the pollutants responsible for visibility impairment, the sources of these pollutants, and the effect of reducing emissions at these sources to facilitate informed management decisions. As acknowledged by EPA in correspondence with Congress and as evidenced by statements made during floor debates, the National Park Service is recognized as having a lead national role and substantial expertise in visibility monitoring and research. The Service intends to maintain its recognized, national leadership role in visibility monitoring and research activities by continuing to devote a substantial portion of the available Servicewide air quality project funds to these activities.

8. Question: Do you feel that the science and technology concerning visibility protection and improvement has advanced to the degree that will allow rulemaking processes to proceed?

Answer: The National Park Service believes that the science and technology concerning visibility protection and improvement has advanced significantly in the last decade, providing substantial basis for the regulatory authorities to proceed with (a) efforts to identify individual sources that contribute to visibility impairment in mandatory Federal class I areas and to consider "best available retrofit technology" for identified sources, and (b) efforts to reduce overall regional haze impairment in mandatory Federal class I areas.

In comments to EPA dated July 30, 1987, concerning a proposed "phase I" rule governing visibility impairment that can be "reasonably attributed" to a source or small group of sources, the Department of the Interior wrote the following:

> "While we recognize that EPA does intend to address regional haze in its phase II regulations, we believe it is not premature to begin addressing this issue under the long term strategy section of these (phase I) regulations....We believe this reexamination is warranted because of the advances in science and the development of modeling and other techniques since the promulgation of the original [1980 visibility] regulations. It may, therefore, be possible to surmount the many difficulties that were cited previously for deferring action on regional haze....We note that the National Park Service has developed analytical techniques to attribute regional haze visibility impairment to specified major source areas and source types. A summary of selected source area analyses, entitled "Development and Application of Air Quality and Visibility Modeling Tools by the National Park Service," was sent to EPA in October, 1986....This summary contains references to technical journal articles where these research studies have been published. Although the National Park Service's work may not pinpoint the particular individual sources that contribute to the existing visibility impairment, it may provide a reasonable basis for States or the EPA to examine the identified source areas and types and begin the process of determining which sources may warrant further control."

Since the Department of the Interior wrote the previously stated comments, understanding of visibility impairment and development of analytical techniques has continued to advance. One widely reported example of this progress is the National Park Service's study of the Navajo Generating Station's impact on wintertime visibility at Grand Canyon National Park, which involved the injection of a unique tracer gas into the power plant's stacks, analysis of the study area's meteorology, and application of several different attribution techniques. This study employed many analytical methods, both quantitative and qualitative. Based on the improved understanding and capability gained from this Grand Canyon study and other work, the National Park Service recently testified at a March 9, 1990, hearing before a House Government Operations subcommittee that the information and models exist which could be used to conduct the assessments needed to develop regional haze regulations.

9. Question: You mention in your testimony that $9.0 million of the funds under the "America the Beautiful" program will go to "enhancing the science and research capabilities of the Service." Will any of these funds go to advancing the science of visibility protection?

Answer: Our plans for the use of this money do not include funding visibility research and monitoring.

10. Question: How much money will the Service spend on visibility protection efforts in this Nation's National Parks? Please provide the committee with a breakdown of these expenditures by Park Service units.

Answer: In fiscal year 1990, the Service will spend approximately $2.5 million of its base funds and $900,000 from other agencies on visibility monitoring and research activities. The bulk of these funds (about $2.4 million) will be devoted to monitoring activities at the parks shown in "TABLE 9: VISIBILITY AND PARTICULATE MONITORING AND ANALYSES" (January 24, 1990). The remaining funds (about $1.0 million) will be devoted to the continuing effort to: assess the current conditions and trends; identify the sources and source regions contributing to visibility degradation; evaluate atmospheric and meteorological conditions which result in relatively pristine visual air quality; establish the relationship between emission changes and visibility; develop, adapt or refine regional air quality models; understand economic and psychophysical aspects of visibility (visitor perception/values); and assess the natural component of visibility impairment.

January 24, 1990 TABLE 9 FY 1990 VISIBILITY AND PARTICULATE MONITORING AND ANALYSES

REGION	PARK	NO. OF SITES	PARTICULATE (U.C. DAVIS)	----------OPTICAL---------- CAMERAS	TRANSMISSOMETERS	PARK SUPPORT	PARK TOTAL	REGION TOTAL
AR	DENA (I)	1	$36,000	$4,200	$0	$2,500	$42,700	
	BELA (SFU)	1	$4,000				$4,000	
	GAAR (SFU)	1	$4,000				$4,000	
	KATM (SFU)	1	$4,000				$4,000	
	NOAT (SFU)	1	$4,000				$4,000	
	WRST (SFU)	1	$4,000				$4,000	
	YUCH (SFU)	1	$4,000				$4,000	$66,700
MAR	SHEN (I)	1	$36,000	$4,200	$29,206	$2,500	$71,906	$71,906
MWR	ISRO (Io)	1	$36,000	$4,200	$0	$2,500	$42,700	
MWR	VOYA (Io)	1	$36,000	$4,200	$29,206	$2,500	$71,906	$114,606
NAR	ACAD (I)	1	$36,000	$4,200	$29,206	$2,500	$71,906	$71,906
NCR	HALL (AU)	1	$36,000	$4,200		$2,500	$42,700	$42,700
PNR	CRLA (I)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
PNR	CRMO (AU)	1	$0	$4,200	$0	$2,500	$6,700	
PNR	MORA (I)*	1	$36,000	$4,200	$29,206	$2,500	$71,906	
PNR	NOCA (AU)	1	$0	$4,200	$0	$2,500	$6,700	
PNR	OLYM (AU)	1	$0	$4,200	$0	$2,500	$6,700	$163,912
RMR	ARCH (Io)	1	$36,000	$4,200	$0	$2,500	$42,700	
RMR	BADL (Io)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
RMR	BRCA (IS)	1	$36,000	$21,000	$0	$2,500	$59,500	
RMR	CANY (I)	1	$36,000	$21,000	$29,206	$2,500	$88,706	
RMR	CARE (AU)	1	$0	$4,200	$0	$2,500	$6,700	
RMR	COLM (AU)	1	$0	$4,200	$0	$2,500	$6,700	
RMR	DINO (AU)	1	$0	$4,200	$0	$2,500	$6,700	
RMR	GLAC (I)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
RMR	GLCA (S)	1	$0	$21,000	$0	$0	$21,000	
RMR	GRSA (Io)	1	$36,000	$4,200	$0	$2,500	$42,700	
RMR	GRTE (AU)	1	$0	$4,200	$0	$2,500	$6,700	
RMR	MEVE (I)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
RMR	ROMO (I)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
RMR	THRO (AU)	1	$0	$4,200	$0	$2,500	$6,700	
RMR	WICA (AU)	1	$0	$4,200	$0	$2,500	$6,700	
RMR	YELL (Io)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
RMR	ZION (AU)	1	$0	$4,200	$0	$2,500	$6,700	
RMR	BLCA (AU)	1	$0	$4,200	$0	$0	$4,200	$665,236
SER	EVER (AU)	1	**	$0	$0	**	**	
SER	GRSM (I)*	1	$36,000	$4,200	$29,206	$2,500	$71,906	
SER	VIIS (Io)	1	$36,000	$4,200	$0	$2,500	$42,700	$114,606
SWR	BAND (Io)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
SWR	BIBE (I)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
SWR	BUFF (AU)	1	$0	$4,200	$0	$2,500	$6,700	
SWR	CACA (Io)	1	$0	$4,200	$0	$2,500	$6,700	
SWR	CAVO (AU)	1	$0	$4,200	$0	$2,500	$6,700	
SWR	CHCU (AU)	1	$0	$4,200	$0	$2,500	$6,700	
SWR	GUMO (AU)	1	$36,000	$4,200	$29,206	$2,500	$71,906	$242,518
WR	CHIR (I)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
WR	DEVA (AU)	1	$0	$4,200	$0	$2,500	$6,700	
WR	GRCA (IS)	2	$78,000	$42,000	$29,206	$11,000	$160,206	
WR	HALE (Io)	1	$36,000	$4,200	$0	$2,500	$42,700	
WR	HAVO(Io)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
WR	JOTR (AU)	1	$0	$4,200	$0	$2,500	$6,700	
WR	LABE (AU)	1	$0	$4,200	$0	$2,500	$6,700	
WR	LAME (S)	1	$0	$21,000	$0	$8,000	$29,000	
WR	LAVO (Io)	1	$36,000	$4,200	$0	$2,500	$42,700	
WR	GRBA (AU)	1	$0	$4,200	$0	$2,500	$6,700	
WR	PEFO (Io)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
WR	PINN (Io)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
WR	PORE (Io)	1	$36,000	$4,200	$0	$2,500	$42,700	
WR	REDW (Io)	1	$36,000	$4,200	$0	$2,500	$42,700	
WR	SAGU (AU)	1	$36,000	$21,000	$0	$2,500	$59,500	
WR	TONTO(I)	1	$36,000	$4,200	$29,206	$2,500	$71,906	
WR	YOSE (I)	1	$36,000	$4,200	$29,206	$2,500	$71,906	$877,742
	TOTALS	63	$1,290,000	$352,800	$642,541	$146,500	$2,431,841	$2,431,841

(I) = IMPROVE
(Io)= NONIMPROVE OPERATED UNDER IMPROVE PROTOCOL
(IS)= IMPROVE AND SCENES
** = FUNDING UNDER PROJECT AREA 7

(AU) = AUXILIARY
(S) = SCENES
* = NEPHELOMETER
(SFU) = STACKED FILTER UNIT

GRAND CANYON NATIONAL PARK

TRANSPORTATION

As you know Director Ridenour, the Grand Canyon National Park is one of the most heavily visited national parks in the country. Over the last 14 years, the visitation at this park has increased over 100%. Needless to say this has put tremendous pressure on various park resources. I am particularly concerned about this park's ability to provide adequate transportation within the park.

11a. Question: Can you please provide the committee with a description of the current shuttle system within the Grand Canyon National Park?

Answer: Grand Canyon National Park operates a mass transit shuttle bus system within the South Rim Village and on the West Rim Drive. This free service was implemented to reduce the adverse impacts associated with the growing number of visitors arriving in their private automobiles and to provide a quieter and more relaxed park visit, free from the traffic congestion that had begun to emerge on the South Rim. In 1989, 2.1 million rides were taken by park visitors on the shuttle bus system.

The existing shuttle bus fleet has a total inventory of 15 passenger units which range in age from 3 to 6 years with vehicle mileage of from 11,000 miles to over 100,000 miles. Four of these busses are generally not in service at any given time, as they will be either in a repair or reserve status as required by contract specification. Therefore, the system operates with a total of 11 busses on the two separate service routes. One route is primarily intended to serve the South Rim Village proper, with the other route providing service on the 8-mile West Rim Drive, which is closed to private automobiles when the shuttle bus system is operating.

11b. Question: When was this shuttle system put into place?

Answer: The shuttle system was started in 1974.

12a. Question: Since the shuttle system was put into place, what has been the growth in visitation at the Grand Canyon National Park?

Answer: In the past 16 years, park visitation has increased from 2 million in 1974 to 4.3 million in 1989. The increases in visitation have also transformed Grand Canyon National Park from a more traditional summer use park, into a year-round operation.

Increased visitation in the shoulder seasons, effectively creates a 9-month heavy visitor use period, extending from March through November.

12b. Question: What has been the funding history of the shuttle system since it was instituted?

Answer: Funding for fiscal years 1974 through 1980 averaged $1.2 million, including costs for interpretation and maintenance services provided by the contractor under the terms of the contract. Under the terms of the new contract awarded for fiscal year 1981, these services were not included. Funding for fiscal years 1981 through 1990 has averaged $622,200 the current base amount. Funds are provided for within the park base. The shuttle system was originally designed in 1974 to provide services from April through October, but currently has been cut back to operate from Memorial Day through September.

13. Question: Has the Park Service undertaken any kind of an analysis of the shuttle system currently in place to determine whether it is adequately meeting the internal transportation at this park? If so, please share with the committee the results of these findings?

Answer: The Grand Canyon National Park staff recently completed a thorough analysis of the shuttle bus system. The review identified the system's inadequacy in meeting the current and projected visitor requirements. It also identified the need for a major expansion in the system's annual operating period from 4 months to 9 months and a need for five additional busses to accommodate the visitor ridership. Additionally, a South Rim transportation study was recently completed by the Denver Service Center which provided a broader analysis of all transportation related issues and also recommended expansion of the shuttle bus system to meet visitor needs.

14. Question: What are the impacts to the park's resources and visitor experience resulting from an inadequate transportation system?

Answer: Impacts to park resources are primarily related to unauthorized off road travel, parking, and congested village roads. Lack of available parking results in the erosion of park land through soil compaction and vegetative destruction. This typically occurs when the available overlook parking areas become full and drivers choose undeveloped areas to park their cars, without regard to the resultant impacts. This problem is especially acute on the West Rim Drive in the spring and fall months, when the park does not close this 8-mile scenic drive to operate the shuttle bus system exclusively, as occurs from June through September.

The South Rim Village receives 90 percent of all park visitation and now experiences traffic congestion, parking problems, and auto related noise and air quality problems that have grown to unacceptable levels. Also, the park has received complaint letters from visitors regarding their difficulties with the shuttle bus system. In 1989, over 100 complaint letters were received concerning crowding on the busses and the interval between bus arrivals at the various bus stops.

15. Question: If improvements are not made in the shuttle system at the Grand Canyon, has the Park Service looked at other ways to deal with inadequate visitor transportation such as banning cars? Please share with the committee these alternative measures.

Answer: The National Park Service is reviewing the Grand Canyon National Park General Management Plan. This review will include an analysis of parkwide visitor transportation concerns.

This review will also examine the implication of a day use limit for the South Rim Village and the total number of cars which would be permitted. There will also be an opportunity during this approximately 3-year review to better assess the potential for the newly restored passenger rail service to reduce the number of automobiles arriving on the South Rim.

The recently completed South Rim Transportation Study recommended a number of changes. This included modifications to certain intersections, road realignments, and new road and parking lot construction to alleviate some of the problems.

A central recommendation, however, was the need for a major day use staging area parking lot and a corresponding expansion in the visitor shuttle bus system. This could provide the mechanism to remove the majority of private automobiles from the village road system. These recommendations will almost certainly be reviewed in the General Management Plan revision.

16a. Question: What funding is necessary in FY 1991 to bring the internal transportation system within the Grand Canyon National Park to a level where it is adequately meeting the demand?

Answer: The Service estimates that is would cost an additional $1.9 million, or a total of $2.5 million on an annual basis, to adequately address the transportation system situation at Grand Canyon. This would include expanding the system's season of operations and riderships capabilities.

16b. Question: Is there funding in the FY 1991 budget request to accomplish this?

Answer: The fiscal year 1991 budget includes $622,200 for a shuttle operation, June through September.

17. Question: Has the Park Service looked at alternative ways to finance this service other than funding it through a line item in the FY 1991 bill? If so, please share these with the committee.

Answer: The Service has considered several alternatives to finance this transportation system, including continued Park Service operation of the system with imposition of a ridership fee and conversion of the Park Service funded shuttle bus system to a private operation. A contract has recently been executed

that will maintain the system under the current arrangement. However, it is my goal to both uprade the system to meet visitor demands and have the user bear the cost.

HOUSING

Director Ridenour, as I have expressed to your predecessors a number of times, I am concerned with the woefully inadequate housing at the Grand Canyon National Park. I think it is appalling that we force people and their families to live in conditions such as what I have seen at the Grand Canyon National Park.

18. Question: What is the status of the Park Service's efforts to improve employee housing at the Grand Canyon National Park?

Answer: A total of 267 positions require housing in South Rim Village (134 permanent and 133 seasonal housing units).

Only 135 existing housing units are categorized as adequate on the South Rim. Thus, the South Rim is deficient by 132 housing units. Fifty-one of these are replacements for existing inadequate trailers and 81 are other new replacements or additional housing.

In fiscal year 1989, four units were rehabilitated and three duplexes were built. Also, a housing condition survey of all housing units at Grand Canyon was completed.

In fiscal year 1990, six more units are scheduled for rehabilitation.

19. Question: Is there sufficient funding in the FY 1991 budget request to continue with these efforts? If not, what funding would be required in FY 1991 to continue?

Answer: The fiscal year 1991 Housing Repair Program budget includes $553,000 for rehabilitating housing at Grand Canyon National Park.

GLEN CANYON NATIONAL RECREATION AREA

It is my understanding that for the last three years northern Arizona has been experiencing drought conditions. This has resulted in a lowering of Lake Powell.

20a. Question: What are the impacts at the Glen Canyon National Recreation Area to the dropping level of Lake Powell?

Answer: With the dropping of the water, launching ramps are "high and dry." This year we have extended five ramps and the trail system at Rainbow Bridge National Monument, and have increased the capacity of sewage lift pumps serving park marinas using emergency funding totaling $1.5 million. Bureau of

Reclamation water elevation projections indicate that the lake level will continue to go down and we will find ourselves in a position of having to extend the ramps and trails, and uprate utilities again next spring.

In addition, the park may be forced to build temporary roads to the general vicinity of the docks and to upsize some boat sewage pumpouts in order to lift the sewage the greater distances and elevations being experienced because of low water elevation.

20b. Question: How much has the lake dropped during these recent drought conditions? Are lake levels expected to drop more?

Answer: As of May 12, 1990, the lake level was 50 vertical feet below full elevation. The Bureau of Reclamation projections made last month were that the lake would continue downwards, and by this time next year would be at the 3,627 feet elevation or 73 feet below full pool. This projection may be optimistic since the Bureau's previous projections underestimated the drop in water level by some 3 feet as of this date.

21. Question: Is there funding in the FY 1991 budget request to mitigate the impacts of the dropping lake levels?

Answer: There is no funding for this purpose in the fiscal year 1991 budget. At the time that the fiscal year 1991 budget was formulated, the extent of the drought in the Four Corners States was not known.

ENVIRONMENTAL IMPACT STUDY

As you know Director Ridenour, the Park Service is a participant in an Environmental Impact Study which is looking at the impacts to the Grand Canyon National Park from the operation of the Glen Canyon dam.

22. Question: Assuming that the Glen Canyon dam EIS will recommend changes in the operations of this structure such as a minimum flow, does the Park Service know what the impacts will be to the Glen Canyon National Recreation Area? If so, what are they? If not, will these potential impacts to the Glen Canyon National Recreation Area be considered as the EIS proceeds?

Answer: We are sure that there will be major impacts to the Glen Canyon NRA, if the Glen Canyon Environmental Study recommends changes to the operations of the Glen Canyon Dam to provide for a constant flow of water needed for ecosystem preservation within Grand Canyon. We believe that these impacts must be identified, studied and acknowledged through the current EIS documents being prepared by the Bureau of Reclamation and Western Area Power Administration (WAPA). When impacts are identified within the Grand Canyon and Glen Canyon, solutions must be sought to minimize, or at least provide for the

mitigation of operational as well as environmental impacts. At the very least, we believe that water elevations at Lake Powell will be much lower than what has been the norm, and for which all visitor facilities were originally developed.

VISITATION

Director Ridenour, as you may know, when the Glen Canyon National Recreation Area was established in the early 70's, visitation was expected to reach 500,000 by the year 2000. However, in 1988, over 3.5 million people have visited this Park Service unit.

23. Question: In the years since the Glen Canyon National Recreation Area was established, what has been the annual percentage of growth in visitation at this Park Service unit? In these same years, what has been the annual percentage of growth in visitation at the Yellowstone National Park? During these years, please show the spending per visitor at these respective parks.

Answer: Increases to visitation at Glen Canyon National Recreation Area have fluctuated greatly, but since 1980 the overall growth rate is 120 percent. The following chart shows a comparison of visitation, percent of increase/decrease, park budget and cost for each visitor for Glen Canyon NRA and Yellowstone NP since Glen Canyon was established. Park budget and cost for each visitor is only available back to 1983.

	GLEN CANYON				YELLOWSTONE			
YEAR	**VISI-TATION**	**PERCENT CHANGE (+/-)**	**BUDGET**	**COST VISIT**	**VISI-TATION**	**PERCENT CHANGE (+/-)**	**BUDGET**	**COST VISIT**
1971	680.6				2,120.5			
1972	962.7	41.4			2,236.9	5.5		
1973	1,199.2	24.6			2,061.7	-7.8		
1974	1,129.5	-5.8			1,928.9	-6.4		
1975	1,106.6	-2.0			2,239.5	16.1		
1976	1,009.8	-8.7			2,519.2	12.5		
1977	2,066.0	104.6			2,481.9	-1.5		
1978	2,136.4	3.4			2,618.4	5.5		
1979	1,656.0	-22.5			1,892.9	-27.7		
1980	1,571.5	-5.1			2,000.3	5.7		
1981	1,733.5	10.3			2,511.8	26.1		
1982	1,733.2	0.0			2,368.9	-6.1		
1983	1,873.0	8.1	$2,826.0	$1.51	2,347.2	-.9	$12,058.0	$5.14
1984	1,971.1	5.2	3,212.9	1.63	2,222.0	-5.3	12,506.1	5.63
1985	2,078.9	5.5	3,587.7	1.73	2,226.2	.2	13,080.5	5.89
1986	2,438.9	17.3	4,198.1	1.72	2,363.8	6.2	13,050.9	5.52
1987	2,858.7	17.2	4,621.2	1.62	2,573.2	8.9	13,158.9	5.11
1988	3,529.2	23.5	4,888.4	1.39	2,182.1	-15.2	13,461.7	6.17
1989	3,452.8	-2.2	4,997.1	1.45	2,644.4	21.2	14,328.3	5.42
1990	N/A	N/A	5,413.8	N/A	N/A	N/A	16,066.7	N/A

24. Question: Where does Glen Canyon rank nationally with respect to visitation hours? Overnight stays?

Answer: Visitor hours at Glen Canyon in 1989 ranked fifth with 76,560,882 hours. Glen Canyon had 2,439,464 overnight stays in 1989, making the park number one in overnight stays among Park Service units.

25. Question: Does the FY 1991 budget request contain sufficient funding to deal with the impacts of the sudden and dramatic increase in visitation at this Park Service unit? If not, what funding would be required in FY 1991 to deal with the impacts of this increase in visitation?

Answer: Because of the tremendous increase in visitation and ever increasing visitor facility infrastructure needs, the funding requirements for the unit are increasing. The unit must, however, compete with other National Park Service priorities for available funding. The park has identified an optimal budget that would require an increase of over $5.7 million in annual operating funds.

26. Question: How does the underfunding of the operating budget for this Park Service unit manifest itself? What services are not being provided?

Answer: It is felt most acutely in visitor and resource protection in the park. Several beaches do not have the presence of a ranger; amphibious aircraft operations have had to be curtailed; no boat or air patrol is conducted on or around the lake; Rainbow Bridge does not have full-time employees to oversee the area; there is very little money for the park safety program; several visitor contact stations are not manned; routine maintenance is being deferred, and no beach cleanup is provided on the 1,900 miles of shoreline of Lake Powell.

27. Question: Has the Park Service looked at the possibility of instituting a fee collection system to offset this funding shortfall? If so, what were the findings?

Answer: The Rocky Mountain Regional Office and the Glen Canyon NRA staff have studied the feasibility of collecting fees. A recreational use fee of $5.00 daily could result in the collection of some $4.5 million each year. However, in order to collect these fees there would need to be nearly $4.6 million construction costs expended in order to provide the seven entrance stations and the quarters for employees necessary to collect the fees. In addition, approximately $800,000 in annual operating funds would also be required to support the additional personnel needed to staff the fee collection function at Glen Canyon National Recreation Area.

The National Park Service has recently reranked its Servicewide priority listing for construction which represents 198 projects, totalling over $2 billion, identified as portraying the highest construction needs of the Service. The Glen Canyon National

Recreation Area entrance fee station construction project did not receive a Servicewide priority, primarily because the revenue-enhancing potential of proposed projects is not a factor in the ranking process. However, we agree that this project, if implemented, would more than pay for itself.

LAKE MEAD NATIONAL RECREATION AREA

LAW ENFORCEMENT

Director Ridenour, in the past I have shared with the committee my concern with the incredible public safety problems facing the Park Service at the Lake Mead National Recreation Area.

28a. Question: For 1989, please provide for the committee the number of law enforcement and visitor assist incidents, class I and class II crimes, and arrests.

Answer: The information follows:

Total number of class I crimes	366
Total number of class II crimes	953
Total number of arrests	516

28b. Question: How many deaths occurred in the park in 1989? How does 1989 compare to other years?

Answer: There were 40 accidental deaths reported at Lake Mead in 1989. This represents a significant increase over the previous few years. There were 28 deaths in 1988, 23 in 1987, and 33 in 1986. To date, 1982 was the year in which the most deaths have been reported, 52.

28c. Question: Would you say that there is a growing public safety problem at the Lake Mead National Recreation Area?

Answer: Yes, it appears that this is a growing problem.

29. Question: What factors contribute to the public safety problem at the Lake Mead National Recreation Area?

Answer: The major contributing factors to the growing problem are a significant rise in visitation to the recreation area in recent years, coupled with a relatively constant level of enforcement personnel at the park. The vast majority of accidental deaths appear to be alcohol-related.

30. Question: In view of the public safety problem at Lake Mead, do you think that there exists a setting where the park visitor can feel safe?

Answer: The park visitor should feel safe in the majority of the recreation area. Most reported problems have occurred in the Northshore, Boulder and Katherine Districts. The Service is continuing to patrol these areas and give them more attention, as available resources allow.

31a. Question: Does the Lake Mead NRA have 24 hour law enforcement protection? If not, why?

Answer: No, a 24-hour law enforcement capability is not maintained. Available resources are distributed among many competing priorities at the recreation area.

31b. Question: Isn't the public safety problem a 24 hour problem?

Answer: Problems related to public safety can occur at any time of the day or night.

31c. Question: Isn't Lake Mead open 24 hours? What would it take in FY 1991 to provide 24 hour law enforcement protection?

Answer: Lake Mead National Recreation Area is open 24-hours-a-day. The Service estimates that 24-hour law enforcement coverage would require an additional 51 FTE's at a cost of approximately $1.7 million for salary, benefits and related support costs.

In addition, an estimated $660,000 would be needed for one-time housing expenses related to the additional law enforcement FTE's.

32. Question: What additional funding would be required in FY 1991 to adequately deal with all of the public safety issues at Lake Mead?

Answer: In addition to the funding needs previously stated, an additional $549,000 could be used to expand sanitation program operations.

SANITATION

Last year, recognizing the critical need for improving the sanitation facilities at Lake Mead, we included an additional $900,000 for the acquisition of the facilities to address this problem.

33a. Question: What is the status of the Park Service's efforts to address the sanitation problems at Lake Mead?

Answer: An amount of $900,000 in line-item construction funding was appropriated by the Congress in fiscal year 1990 for the purpose of addressing the requirements of an overall sanitation program improvement effort. The park is presently in the process of securing the capital improvements items that are required, which include concrete vault toilets, floating chemical toilets, permanent restroom facilities, garbage dumpsters, sewer pumpout truck, and required marine equipment.

33b. Question: Are there additional requirements that would need additional funds in FY 1991? If so, how much additional funding is needed?

Answer: An additional annual operating increase of $549,000 could be used in fiscal year 1991 to address the manpower workload requirements associated with the litter and sanitation program. This would provide funding (plus associated support costs) for one truckdriver, four maintenance worker/boat operators, and six laborers, and would enable the park to more effectively deal with both front-country and back-country litter pickup and sanitation requirements.

ENTRANCE FEES

34a. Question: Has the Park Service reviewed the possibility of implementing a fee collection program at Lake Mead? If so, what were the findings of this review?

Answer: The Park Service has reviewed the possibility of implementing a fee collection program at Lake Mead, and feels that it would be an appropriate course of action that would benefit both the visiting public and the recreation area.

34b. Question: Is it feasible to implement a fee collection program at Lake Mead?

Answer: Yes, it would be feasible to implement a fee collection program, provided adequate infrastructure and operating expenses are available to properly operate the entrance stations. Under this scenario, entrance stations would serve three primary purposes: they would increase revenues, improve the park's ability to provide a safe, high quality experience for visitors by having some control over who might enter, such as drunk drivers, and provide a means of disseminating visitor/safety related information.

35a. Question: What would be the capital costs to implementing a fee collection?

Answer: Estimated capital improvement costs are identified as follows:

Nonrecurring Capital Costs	$(000)
Capital Improvements	$2,188
Equipment and Supplies	224
Planning/Design/Supervision	678
Housing Costs	2,260
Total	5,350

35b. Question: What would be the annual, recurring costs for the fee collection program?

Answer: Estimated annual operating costs are identified as follows:

Operating Costs (Recurring)		$(000)
Personnel Compensation (45 FTE's)		945
Utilities		18
Supplies and Materials		73
	Total	1,036

36. Question: If fees were collected at Lake Mead, how much revenue does the Park Service anticipate would be generated annually? Of this amount, how much would stay in the Park?

Answer: Estimated annual revenue, based on 1989 visitation, is as follows:

		$(000)
Daily Entrance Fees		3,484
Annual Park Pass		1,066
Golden Eagle		7
	Total	4,557

Under current fee legislation, funds are deposited in a special Treasury fund, with half of collections available for distribution Servicewide, and half available to the collecting park area in the following budget year, subject to how Congress appropriates the funding.

FLOOD MITIGATION

As you know Mr. Director, $300,000 was included in the FY 1990 bill to fund the Bureau of Reclamation's efforts to develop a flood mitigation plan at Lake Mead.

37a. Question: Mr. Director, can you please bring the committee up-to-date with these efforts?

Answer: Congress appropriated $300,000 in fiscal year 1989 and an additional $300,000 in fiscal year 1990 to complete the flood mitigation planning, design, and engineering work for Willow Beach and Cottonwood Cove, the areas with the most significant flood hazard. This work is being accomplished by the Bureau of Reclamation under the auspices of an interagency agreement.

37b. Question: Has the flood mitigation plan been completed? If not, when do you anticipate completing this plan?

Answer: The plan has not been completed. As the Bureau of Reclamation proceeded in the planning process, it was determined that the scope of work needed to be revised significantly. The area identified for a proposed Park Service campground was not adequate in size and a relocation of the proposed site was necessary. The potential for an entrance station program also necessitated the identification of a site appropriate for the capital improvements associated with this program. These changes required additional surveys and topography and a major revision of utility system plans to serve the development. A portion of the plan, addressing Willow Beach, is scheduled for completion in 1991.

37c. Question: Is there sufficient funding in the FY 1991 budget request to proceed with this plan?

Answer: The available funding will complete the planning for the Willow Beach area, but is not sufficient to complete Cottonwood Cove. The additional $180,000 that would be necessary to complete the planning and design work for the Cottonwood Cove flood mitigation is not budgeted in fiscal year 1991.

38. Question: Do you anticipate funding for the flood mitigation measures through the normal Park Service budgeting processes? If not, how does the Park Service plan on funding these measures?

Answer: These projects are presently identified as priority number 113 in the Servicewide line-item construction program listing. Based on this ranking, it will be several years in the future before funding for these projects will be forthcoming.

SAGUARO NATIONAL MONUMENT

Last year, the committee included $367,000 for planning, site analysis and architectural design for the development of a new visitor center at the Red Hills unit of the Saguaro National Monument.

39a. Question: Can you please bring the committee up-to-date with these activities?

Answer: Advance planning for this project is underway. An initial scoping trip and preliminary site analysis have been completed. Site specific surveys are underway. The University of Arizona Landscape Architecture and Architecture Departments are involved as part of the design effort.

39b. Question: Assuming adequate funding, will you be able to commence construction in FY 1991?

Answer: Yes, construction of phase I could commence in fiscal year 1991. It would be necessary to phase construction to mitigate adverse effects on both visitor experience as well as park operations. The first phase would include rods, parking, utilities, site development and the construction of a maintenance building and a residence. The final phase would include the new visitor center and rehabilitation of the administration building.

40. Question: What funding will be required in FY 1991 to commence construction on the Red Hills visitor Center?

Answer: Funding needed to commence construction in fiscal year 1991 is $1,215,500 for the first phase.

QUESTIONS SUBMITTED BY SENATOR QUENTIN N. BURDICK

KNIFE RIVER INDIAN VILLAGES NATIONAL HISTORIC SITE

1a. Question: The Knife River Indian Villages National Historic Site visitor/administrative center project is now under construction. What amount of funding will be necessary in FY 91 to complete this facility?

Answer: A total of $600,000 would be required in fiscal year 1991 to complete this facility. This will cover paving, furnishings, laboratory furnishings, curatorial shelving, Earth Lodge, road obliteration, and additional needs for completing interpretive exhibits.

1b. Question: Assuming this funding is forthcoming, when might the project be completed?

Answer: This project could be completed in the fall of 1991, should the $600,000 be provided.

THEODORE ROOSEVELT NATIONAL PARK

2. Question: The FY 90 Interior Appropriations bill included initial construction funds for a new visitor center at the North Unit of Theodore Roosevelt National Park. What is the status of this project and what level of funding will be necessary in FY 91 to complete the new center?

Answer: Water and sewer service has been initiated at the site. Construction documents for the visitor center, parking and site work are 75 percent complete. A total of $400,000 is needed in fiscal year 1991 to complete the new center. This funding would provide for a fee station and parking lot, visitor center site work, visitor center basement finishes, removal of an existing contact station, furnishings, climate control, exterior signs, and interpretive exhibit production.

FORT UNION TRADING POST NATIONAL HISTORIC SITE

Reconstruction of the Fort Union Trading Post National Historic Site near Williston, ND is nearing completion. Five major new structures have been built at the site. The new facility has resulted in the following increase in visitation:

1987	44,300 visitors
1988	28,748 visitors
1989	64,552 visitors

In addition, I am told that during the first three months of this year, visitorship has increased by 107 percent.

In spite of this, Fort Union continues to operate on a predevelopment budget and staff. In fact, Fort Union will this year be operating with fewer employees than last year.

3a. Question: How does the Service justify a decrease in personnel, while the number of visitors increases?

Answer: The budget for Fort Union has remained relatively constant at $151,200 and 7 FTE's in fiscal year 1989 and $156,600 and 7 FTE's in fiscal year 1990. Although neither FTE or operating funds have increased sufficiently to compensate for the increased development or visitation, the fiscal year 1991 budget does request an increase of $70,000 and 3 FTE's for Fort Union which addresses this need.

3b. Question: How does operations funding at Fort Union compare to other units of the Park Service with comparable numbers increases?

Answer: The following list compares Fort Union and other Service units with approximately the same visitation.

Park	Fiscal Year 1991 Budget Request	Fiscal Year 1989 Visitor Use (000's)
Arkansas Post NMem	$212,000	68
Edison NHS	1,162,100	65
Fort Laramie NHS	564,700	67
Fort Union Trading Post NHS	230,500	64
Klondike Gold Rush NHP (Seattle)	227,300	70
Tonto NM	262,800	64

3c. Question: For the sake of comparison, please provide for the committee a breakdown of those units which are most similar to Fort Union, interpretively and visitorwise, and the accompanying operations funding level for each?

Answer: There are several parks in the Service that have interpretive themes and visitation similar to Fort Union Trading Post. The following chart compares a few of those parks' operations funding and visitation.

Park	Fiscal Year 1991 Budget Request	Fiscal Year 1989 Visitor Use (000's)
Arkansas Post NMem	$212,000	68
Bent's Old Fort NHS	526,800	45
Chiricahua NM/Fort Bowie NHS	624,300	78
Fort Davis NHS	442,100	55
Fort Laramie NHS	564,700	67
Fort Scott NHS	467,900	77
Fort Stanwix NM	448,800	53
Fort Union Trading Post NHS	230,500	64

CUSTER TRAIL

4. Question: There is interest in having the National Park Service provide ~~a trail~~ between Fort Lincoln in North Dakota and Custer National Battlefield in Montana, to be known as Custer Trail. Please provide a statement on the capability of the NPS to perform a feasibility study in 1991, an estimate of the costs to perform the study and how long it would take to perform the study.

Answer: The National Park Service could undertake the feasibility study for a Custer Trail in 1991 if funds were available. This study would take 18 months and would cost an estimated $150,000. We would envision a technical study assessing the resources along the route traveled by Custer and his troops from Fort Abraham Lincoln in North Dakota to the battlefield on the Little Bighorn River. Eligibility for historic trail status would be examined. The study would include consultation with appropriate agencies and Government entities, but because of its technical nature no formal public meetings are included in this cost estimate. More extensive public involvement would increase the cost and time required for the study.

QUESTION SUBMITTED BY SENATOR DALE BUMPERS

YOSEMITE NATIONAL PARK

1. Question: As you know, the existing concession contract for Yosemite is up for renewal in 1993. Have contract negotiations started? Who is negotiating the contract on behalf of the government?

Answer: The National Park Service has not entered into contract negotiations with Yosemite Park and Curry Company as of this date. At this time, it has not been determined who will negotiate the contract on behalf of the Government.

QUESTION SUBMITTED BY SENATOR ERNEST F. HOLLINGS

CHARLESTON-FORT SUMTER

1. Question: What is the status of the Charleston-Fort Sumter tour boat facility?

Answer: The National Park Service, the city of Charleston and Mr. Campsen the concessionier and developer of the proposed restaurant, have been working diligently for the last dozen years to provide an embarkation point in downtown Charleston for Fort Sumter visitors. Currently, we are waiting for the concurrence of the mayor of Charleston with the Service's final draft site plan. After meeting on this subject in February, only one issue remained unresolved between the Service and the city of Charleston.

The National Park Service plans to proceed on this project as soon as all agreements with the city and Mr. Campsen have been fully executed. At this time, we anticipate commencement of National Park Service facility construction approximately 12 months after the agreements have been signed. Approximately $3.2 million remains unobligated in the account. However, continuing planning for this facility is estimated to require $550,000 in fiscal year 1990, leaving a balance of $2,679,000 for this project. This amount will not be sufficient to complete construction. An accurate estimate of the shortfall will be prepared as soon as the Memorandum of Understanding has been signed and the site plan agreed to by all three parties.

QUESTIONS SUBMITTED BY SENATOR HARRY REID

LAKE MEAD NATIONAL RECREATION AREA

Nevada and Arizona are home to the oldest and the largest national recreation area in the National Park System, Lake Mead National Recreation Area. The park is 1.5 million acres and offers water based activities and spectacular scenic vistas from miles and miles of park roads and trails. There are some 235 miles of paved roads, 800 miles of dirt roads, 400 coves and 1,000 miles of shore line in the Lake Mead National Recreation Area.

The beauty and diversity of the Lake Mead Recreation Area drew more than 8 million visitors last year--a 43% increase over 1983 figures. Projections for visitors in 1990 exceeds 9 million.

I fear that the Lake Mead management team will not be able to realize their mission, as stated in a 1988 strategic planning process, to "conserve and protect the Lake Mead National Recreation Area resources for present and future generations; provide a diversity of high quality, appropriate recreational opportunities, programs, and experiences for visitors; serve the community through public information and education programs; operate an efficient, effective, and well-run organization that supports staff in their efforts to serve the public."

The great increase in visitation has not been met with similar increases in Park Service spending at Lake Mead. The Lake Mead management will be hard pressed to provide a "diversity of high quality ... experiences for visitors" under current funding levels.

FEE COLLECTION STATION

1. Question: Wouldn't entrance fee collection be a reasonable way, providing the people of Nevada are amenable, to bring additional dollars to Lake Mead in a manner that is proportional with its rapidly increasing visitor use?

Answer: The Land and Water Conservation Fund Act (LWCFA) of 1965, as amended, provides that recreation fee revenue be returned to the parks for use in resource protection, research, interpretation and maintenance activities related to resource protection. All fee revenue is subject to appropriation and is distributed according to the formulas mandated by the 1987 amendment (Public Law 100-203) to the LWCFA.

We estimate an annual recreation fee revenue of $4.6 million could be collected at Lake Mead. To do so would require the construction of nine entrance stations in both Nevada and Arizona, employee housing and equipment necessary to operate the program at an estimated cost of $5.35 million. This cost also includes planning and design. Recurring costs for personnel, utilities and supplies would require $1.036 million annually.

Should the Service increase its fee revenue by over $4 million annually, it would be our expectation that Lake Mead would benefit through an upward adjustment to the park operational base as a result of additional appropriations provided to the Service.

2. Question: Construction of entrance fee collection sites will be of sizable initial cost, yet, with more than 8 million visitors per year, the sites will more than pay for themselves. Based on 1989 visitation figures, the annual revenue is estimated to be over $4.5 million. Won't the proposed multi-million dollar decrease in the Park Service construction budget severely limit the realization of some very meritorious projects such as the Lake Mead entrance fee proposal?

Answer: The projects proposed for fiscal year 1991 funding represent those highest Servicewide priority projects for which final design has progressed to a stage which assures accurate cost estimates and project obligation during the fiscal year.

The National Park Service has recently reranked its Servicewide priority listing for construction which represents 198 projects, totalling over $2 billion, identified as portraying the highest construction needs of the Service. The Lake Mead National Recreation Area entrance fee station construction project did not receive a Servicewide priority, primarily because the revenue-enhancing potential of proposed projects is not a factor in the ranking process. However, we agree that this project, if implemented, would more than pay for itself.

SANITATION

I am pleased to see the request for the Operation of the National Park System Account reflects an 8% increase over FY 90.

Last year I pushed for an additional appropriation of $900,000 for the construction of much needed sanitation facilities which should begin to address some of the serious impacts 8 million people can have on the area's natural resources. On busy summer days, every sandy cove has recreationists using them--many as a place for an overnight stay. Some popular coves are used by as many as fifty different groups at once--needless to say, without proper sanitation facilities the quality of the visitors' experience would be much reduced and the public health hazard much increased. As I said, the new construction will begin to mitigate some of the sanitation problems experienced in recent years at Lake Mead.

3. Question: Last year's appropriation did not reflect an annual operation funds increase to address the manpower workload requirements associated with the litter and sanitation program. Does your FY 91 budget provide the estimated $550,000 to Lake Mead for the operation of the new litter sanitation facilities?

Answer: An increase of $200,000 is requested for park based operational maintenance to deal with the sanitation and litter problems at Lake Mead National Recreation Area.

VISIBILITY IMPAIRMENT

On April 3, 1990, the Senate adopted S. 1630, the Clean Air Act Amendment of 1990. One specific element of the Senate version of the Clean Air bill dealt with the preservation of visibility in the national parks. It was a significant reiteration that visibility as a value is important to the American public so that they may enjoy their experience in the national parks throughout our Nation. The visibility amendment was one of the more contentious amendments that ultimately gained widespread support.

4. Question: Last month, the Director personally participated in the discussions between the Senate and the Administration on the amendment to the Senate Clean Air bill dealing with visibility preservation in the national parks. How does the Service view its role now and in the future given the mandate (on a 92-7 vote) that the Senate is serious about protecting the magnificent vistas that we have throughout our Nation and particularly in the West?

Answer: As acknowledged by Environmental Protection Agency (EPA) in correspondence with Congress and as evidenced by statements made during floor debates, the National Park Service is recognized as having a lead national role and substantial expertise in visibility monitoring and research. The National Park Service currently monitors some aspects of visibility in 54 parks. The Park Service intends to maintain its recognized, national leadership role in visibility monitoring and research activities by continuing to devote a substantial portion of the available Servicewide air quality project funds to these activities. Because of our scientific expertise, extensive visibility monitoring network, and resource management responsibility in this area, we are in a position to play a key role in designing and conducting additional studies if the visibility-related provisions in the Senate Bill ultimately are enacted into law.

5. Question: In these discussions with the Administration on the Clean Air bill we were informed that sufficient resources to implement the visibility protection provisions of the 1977

Amendments were not adequately focused on addressing the intent of Congress. Is the mission of the air quality program considered a priority activity within the National Park Service?

Answer: Protection of air quality in the National Park System is a high priority activity with the National Park Service. To carry out the Federal Land Manager's current responsibilities and to further the visibility goal under the Clean Air Act, the National Park Service conducts the following types of activities:

> Monitoring: The National Park Service maintains an air quality monitoring network of 83 stations in 74 National Park Service areas (at least one parameter in: all of the 48 class I areas; 18 class II floor areas; and 8 other class II areas). Funding for this activity totals $4,427,000 and 7 FTE's, plus contractor and park personnel support.
>
> Research: The National Park Service performs research and methodology development, including modeling, effects on biological resources, and visibility. Current funding is $1,126,000 and 8 FTE's, plus contractor and park personnel support.
>
> Permit Review: The National Park Service, through its Air Quality Division (AQD), has reviewed over 300 permit applications in the past 12 years to determine whether the proposed source would adversely impact class I area air quality related values (AQRVs). AQD staff perform a rigorous engineering review of the proposed control technology, as well as a review of the modeling techniques used to estimate air quality levels within a class I area which often requires additional modeling by AQD staff to confirm predictions. Staff biologists and physical scientists must then determine whether class I area AQRVs (including visibility) will be adversely affected by the proposed source. Reviews of permit applications are based on information from the monitoring network and research results. Current funding is $226,000 and 4 FTE's.
>
> Coordination and Assistance Functions: The National Park Service coordinates and cooperates with State and Federal regulatory agencies, including review of State implementation plans. Currently $262,000 and 3 FTE's are devoted to this function. In addition, $228,000 and 3 FTE's are devoted to planning, education and outreach, including training of National Park Service personnel and assistance with interpretive activities and planning.

6. Question: Given the National Park Service's long-standing efforts to collect information on visibility impairment in the National Parks, for example the **IMPROVE** (Interagency Monitoring of PROtected Visual Environments) program and **SCENES** (Subregional Cooperative Electric Utility, National Park Service, Environmental Protection Agency, and Department of Defense Study), what are the subsequent activities that the Service will undertake to analyze the data, to help define the source or source region contributing to the problem, and to actively participate in action plans to mitigate impairment of visibility?

Answer: The National Park Service plans to continue its monitoring efforts in order to establish baseline conditions and to identify and quantify temporal changes in the visibility conditions in National Park Service units. The number of sites at which the National Park Service can continue visibility monitoring will depend on the extent to which EPA funds IMPROVE in future years. Without EPA's support, the present monitoring network cannot be maintained.

The National Park Service plans to continue to enhance its monitoring equipment in order to more accurately measure particulates that can help identify the cause of visibility impairment and to better characterize the role of elemental and organic carbon as causes of visibility impairment. In particular, we will focus on determining the relative impact of manmade and natural sources of organic compounds.

The National Park Service plans to intensify research efforts to identify the meteorologic and atmospheric dispersion characteristics that lead to good and impaired visibility conditions. These research efforts will include source receptor model development and application for long range transport and complex (rugged) terrain circumstances. The National Park Service will also stress the development of strategies necessary to protect the magnitude and frequency of occurrence of good visibility conditions and seek to quantify the amount of visibility improvement associated with actual emission reductions.

The National Park Service will continue to share the information and tools acquired with other Federal, State and local agencies, as well as industrial and public interest groups and to encourage a cooperative approach to monitoring, research and regulatory activities. The National Park Service anticipates being actively involved in the development of strategies to remedy and prevent visibility impairment at the Federal and State level, including providing technical assistance to any interstate commissions that may be established.

7. Question: What increased level of activity does the Park Service expect as a result of its role in the air permitting process and likely participation in the Visibility Transport Commissions?

Answer: With reference to the permitting process, Senate Bill 1630 would require Federal Land Managers to review permit applications for class II floor areas as well for class I areas, which would more than double the current workload (permit application reviews would need to be done for 104 areas instead of 48). Not only would this increased burden in permit reviews require a doubling of the permit review staff, but it would also require additional staff for the acquisition of air quality and air quality related values baseline data in class II floor areas. In addition, biomonitoring, visibility and gaseous pollutant monitoring will be needed to respond to permits and would also require additional staff.

With respect to participation in the Visibility Transport Commissions, the probable legislative expansion of the visibility research and regulatory program would require increased National Park Service efforts in the following areas:

Cooperative interaction with EPA and State agencies, including required National Park Service participation in interstate visibility transport commissions.

Expansion of current visibility monitoring in class I areas.

Assessment of current conditions and trends.

Identification of sources and source regions contributing to visibility degradation.

Evaluation of atmospheric and meteorological conditions which result in relatively pristine visual air quality.

Establishment of the relationship between emission changes and visibility.

Development, adaptation or refinement of regional air quality models.

Understanding economic and psychophysical aspects of visibility (visitor perception/values).

Assessment of the natural component of visibility impairment.

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

CHANNEL ISLANDS NATIONAL PARK

In February of this year, the National Park Service proposed to the Subcommittee an over appraisal for four undivided one quarter interests in the Gherini Ranch at Channel Islands National Park. The Service has options to purchase three of the four undivided interests for $4.5 million each. The most recent appraisal is $3.5 million for each interest. It is also my understanding that an offer of $3.875 million has been accepted by two of the four owners.

The Park Service proposes to use $3.5 million available in the Channel Island lands account and additional amounts from the Emergencies and Hardships account to purchase one quarter interest. Funds necessary for the remaining three quarter interests are requested in the President's FY 91 budget.

The precipitating event which led to this proposal was the death of Pier Gherini, the owner of a one-quarter undivided interest in the land. Estate taxes became due on March 20, 1990.

1. Question: How often has the National Park Service acquired undivided fractional interests? Other Federal land agencies?

Answer: A complete answer to this question would require a comprehensive and time-consuming review of the Service's land acquisition records dating back to the beginnings of the acquisition program. The Service has no records of such acquisitions by other Federal agencies. Title to land is not frequently held in undivided interest, therefore, the National Park Service acquires such interests infrequently. Pursuant to order no. 440-70 of the Attorney General, dated October 2, 1970, the Federal acquisition of a fractional interest in land requires the approval of the Attorney General. A letter of February 12, 1990, from the Department's Office of the Solicitor to the Assistant Attorney General, Land and Natural Resources, requested approval for the acquisition of undivided fractional interests in the Gherini Ranch at Channel Islands National Park. By letter of March 12, 1990, the Assistant Attorney General approved the Service's separate acquisition of four undivided fractional interests in the Gherini Ranch.

2. Question: What are the abilities of the land owners to develop the property?

Answer: If the owners of the undivided quarter interests are unwilling or unable to concur on development plans for the property, litigation could be initiated to partition the property. Only then, after partitioning has occurred, can development commence on the divided portions of the property.

CLEAN AIR ACT

One of the issues in the pending Clean Air Act is the visibility in National Parks. The Senate bill authorized the Environmental Protection Agency to spend $8.0 million for five years to monitor visibility in federal Class I areas.

The budget includes $5.3 million to develop and support a monitoring network in parks with significant air pollution concerns (pg. 94).

It is my understanding, however, that the Park Service is targeting power plants primarily in the West for monitoring and possible emissions reductions.

3. Question: What is the nature of the Park Service's visibility program?

Answer: The Clean Air Act Amendments of 1977 set a "national visibility goal" to prevent future and remedy existing manmade visibility impairment in class I areas. The "visibility protection" section of the Clean Air Act and the Environmental Protection Agency's implementing regulations require significant National Park Service involvement in characterizing visibility resources; identifying the sources and effects of visibility impairment; and consulting on relevant implementation measures, permits, and control technology.

The Park Service visibility program has established four primary objectives:

> Develop background visibility data for National Park Service areas and assess visibility trends.
>
> Develop and evaluate visibility monitoring methods for use in National Park Service areas.
>
> Determine causes and sources of visibility impairment.
>
> Conduct research on human perception of visibility impairment and human reaction to impairment.

The visibility monitoring program began in 1978, and the Service currently monitors visibility in 60 parks. In addition, the Service has helped to develop and evaluate state-of-the-art techniques in monitoring and source-receptor modeling. The Service has also performed source apportionment studies for at least a dozen parks and has studied many aspects of the visitor's experience with visibility impairment.

4. Question: Are there specific power plants targeted?

Answer: The visibility program does not specifically "target" power plants for monitoring and possible emissions reductions. The Service is interested in knowing the visibility conditions in all parks, particularly class I parks and all causes/sources of detected visibility impairment. The National Park Service studies power plants, among other sources, because sulfur and nitrogen oxides have been documented as significant contributors to visibility impairment, and power plants are typically major sources of these pollutants. One Service study that did focus on a single power plant, however, was the Winter Haze Intensive Tracer Experiment, known as WHITEX, carried out in cooperation with the utility industry, the power plant operator, and other Federal agencies. The express purpose of the WHITEX study was to test the feasibility of attributing emissions from a single point source, the Navajo Generating Station at Page, Arizona, to visibility impairment in Colorado plateau parks. Another proposed study that will examine a particular power plant along with other possible sources of visibility impairment is the Pacific Northwest Regional Visibility Experiment Using Natural Tracers ("PREVENT"). The purpose of this proposed study is to apportion summertime haze (and fine particle concentrations) observed in several class I areas to the major sources of emissions in the Pacific Northwest and British Columbia. Although all potentially contributing sources will be studied, two sources of specific interest are the intermittent slash and prescribed burns common in the area and the Centralia Power Plant at Centralia, Washington, a large source of sulfur dioxide.

5. Question: Are all possible contributors targeted?

Answer: The Service tries to study all contributors to, and constituents of, visibility impairment.

6. Question: How does the current Park Service program compare to the provision included in the Senate bill?

Answer: Our understanding of the provision included in the Senate bill is that it would not change the statutory and regulatory authorities of the current Clean Air Act with respect to visibility protection. The statute would continue to require "best available retrofit technology" for major sources which "emit any air pollutant which may reasonably be anticipated to...contribute to any impairment of visibility" in a class I area. Also, the statute would continue to require long-term plans to prevent future and remedy existing manmade visibility impairment in class I areas. The provision in the Senate bill would appear to authorize more study and multi-State participation toward the performance of these visibility protection responsibilities under the existing Clean Air Act. In addition, the Senate bill would expand the prevention of significant deterioration permit notification requirement to provide the Federal Land Manager earlier notice and more complete information covering major sources potentially affecting a broader category of areas, class I and mandatory class II areas.

7. Question: Will the Park Service account for reductions to be made under other provisions of the pending Clean Air bills when implementing a program to improve visibility in national parks?

Answer: The Congress has not yet passed clean air legislation, so National Park Service does not know how such legislation, once enacted, would affect the various possible contributors to visibility impairment at the subject class I areas. The National Park Service will take into consideration all measures that reduce visibility impacts. The authority to implement measures to improve visibility does not reside in the National Park Service. Rather, the Clean Air Act gives this authority to the States and the Environmental Protection Agency (EPA).

VISIBILITY IMPAIRMENT AT MOUNT RAINIER

The reason I bring up these questions is the Park Service's apparent intent to monitor visibility at Mount Rainier in Washington state. The study is designed to focus on sulfur dioxide emissions from the Centralia coal-fired power plant, although the Park Service acknowledged in testimony before the House Committee on Government Operations on March 9, 1990 that carbonaceous materials, not sulfates, are the chief contributor to visibility impairment at Pacific Northwest Parks.

This is corroborated by the 1986 Panoramas study by the States of Idaho, Oregon and Washington, which found that vegetative burning accounted for 62 percent of perceived visibility impairment in the Northwest, while natural and manmade sulfur dioxide emissions accounted for 15 percent.

8. Question: Why would the Park Service focus a study on a source which it already believes to be a minor contributor to visibility impairment in the Region?

Answer: We assume this question is in regard to the "PREVENT" study. The National Park Service is undertaking a study of visibility impairment at several class I areas in the Pacific Northwest to determine all causes and sources of impairment. The study is moving forward with the cooperation of EPA, the Washington Departments of Ecology and of Natural Resources, the Oregon Department of Environmental Quality, the Forest Service, local air pollution control agencies, and utility industry representatives. The Washington Department of Ecology recently concurred with the approach of the study in a letter to the National Park Service. The letter stated:

> "In our view, the study has been well designed to identify all sources contributing to visibility impairment. Total speciation of all contributing pollutants is necessary to determine any one pollutant's contribution. We are satisfied that the study is designed with this fundamental concept as its basis."

Sulfates are a major contributor to visibility impairment in these parks, as National Park Service monitoring and the 1984 PANORAMAS study show. For example, the PANORAMAS study indicated that, on average, sulfates are the second largest contributor, after carbonaceous materials, to fine particle mass. Moreover, under certain conditions, PANORAMAS indicated that the Centralia power plant contributed significantly to total fine particulate mass in the form of sulfates at a monitoring location near Mount Rainier. Subsequent to the PANORAMAS monitoring program, routine National Park Service particle concentration measurements over the period 1985 to 1988 indicate a strong upward trend in sulfate concentrations at Mount Rainier. On nearly half the days sampled in the park during the summer of 1988, sulfates comprised from 30 to over 75 percent of fine particle mass, with even greater contributions to visibility impairment due to the effective light scattering properties of fine sulfate particles. The proposed PREVENT study will examine all causes of visibility impairment at these parks, including sources of organics, sulfates, and other fine particulates.

9. Question: Why is the Park Service devoting funds to study a source which will probably have to make sulfur dioxide reductions under the acid rain provisions of this year's Clean Air Act

amendments? Centralia's sulfur dioxide emissions were about 1.7 lbs/million BTU in 1985, and they will receive emissions allowances based on a 1.2 lbs/million BTU standard.

Answer: The proposed PREVENT study will not study Centralia alone, but rather all sources of visibility impairment affecting the region's class I areas. In addition, the requirements of future clean air legislation are still speculative and the requirements of the pending acid rain title are not necessarily the same as the requirements of the existing visibility protection provision. The National Park Service's interest is in protecting park visibility consistent with the values and purposes for which the various parks were established. Accordingly, and as required by law, the EPA and State authorities implementing the visibility protection provisions will certainly take into consideration all measures that reduce visibility impacts on class I areas.

10. Question: Is it the Park Service's intention to assess all potential contributors to visibility impairment at Mount Rainier before attempting to gain reductions at any single source?

Answer: The proposed PREVENT study will examine all contributors to visibility impairment at the several class I areas in the Region. Under the Clean Air Act, the authority to require emission reductions at any single source resides in the States and EPA, not in National Park Service.

11. Question: Is it the Park Service's intent to do cost effectiveness studies of potential reductions as part of its analysis?

Answer: The National Park Service has no current plans to do cost effectiveness studies of potential source reductions. Such studies are more relevant to certain potential decisions required of the States and EPA under the Clean Air Act's visibility protection provision than they are to the National Park Service's responsibilities.

DIVISION OF LEGISLATION

The FY 88 Conference Report recommended that the Director of the National Park Service review the operation of the Division of Legislation and provide a report to the Committee to determine if any organizational changes are necessary. Specifically, the Committee requested a feasibility study of having the regional offices and the Office of Planning and Development provide greater assistance in preparing material for congressional reports and the feasibility of combining the Division of Legislation and the Office of Planning and Development.

This action followed bill language included in the FY 87 bill restricting the expansion of the legislative staff or compensation of new personnel at a grade level greater than the staff replaced.

It is my understanding that you have completed this review and have concluded that:

1. the Division of Legislation workload has doubled in the last three years;

2. additional assistance from the Regional offices is not feasible;

3. additional assistance from the Associate Director, Planning and Development is not feasible without additional staff; and,

4. it is not feasible to combine legislative functions with the Associate Director of Planning and Development.

12. Question: With those conclusions, what are your recommendations?

Answer: We are reviewing ways in which additional people can be made available for the Division of Legislation. For the near term, we are looking at reassignments of existing positions so that people may be added within the existing FTE ceiling for the Service. In the future, we may explore a realignment of functions under the Assistant Director, Legislative and Congressional Affairs. Any reorganization or realignment of the functions will be done in consultation with the Committees and in accordance with applicable reprogramming guidelines.

CONCESSIONAIRES

A recent article in the Wall Street Journal focused attention on some of the concession activities in the National Park Service. Some of the critics in the article charge that concessionaires strongly influence park policy while returning very little. On the other hand, it was also indicated that they provide millions of dollars for park facilities, including capital improvements.

It is my understanding that the Department is undertaking a study of the concessionaires' activities.

13. Question: What is the status of the study?

Answer: In December 1989, the Secretary requested the Director to develop program proposals to improve the National Park Service Concessions Management program. He also requested the Inspector General to follow up on its 1986 audit report of the Concessions Management program. The task force completed its review and on April 9, 1990, the chairman provided the Director with the completed report. In the Inspector General's review, the auditors completed their audit work and on April 16, 1990, the Inspector General provided the Secretary with the final audit report.

14. Question: Will there be recommendations included in the study?

Answer: Both studies include several recommendations for improving the Concessions Management program. After reviewing the recommendations, the Service intends to take action to address this issue.

CONTRIBUTIONS TO THE GENERAL TREASURY

Unfortunately, the Park Service is very similar to the other land agencies funded by this subcommittee; funds are inadequate. As I look at this situation, I feel myself in somewhat of a conflicting position.

On the one hand I feel the Park Service has a responsibility to negotiate fair contracts so the government receives a fair price for the activities contemplated in a particular contract.

On the other hand, I do not think we should look for ways to increase cash contributions to the General Treasury at the expense of the parks. This Subcommittee has a hard enough time providing the Park Service with the amount it already receives.

15. Question: As you continue with this process, how do you intend to keep some of the additional funds that some contemplate for the parks? OMB is good at getting their hands on funds that don't belong to them.

Answer: As the process of exploring options for concessions management reform moves forward, one topic of discussion will be alternatives for disposition of any increase in revenues.

16. Question How will smaller parks without large concessionaire activities participate in the additional dollars?

Answer: The discussion centering on alternatives for disposition of any increase in revenues will explore this question.

17. Question: Will the preferential right of renewal be proposed for elimination?

Answer: The task force in its report recommended that the preferential right of renewal be changed; however, the Inspector General in his report recommended that it be eliminated. Both recommendations are under review.

18. Question: How will you deal with possessory interests?

Answer: Possessory interest is also a difficult issue. The Service has just received the recommendations for dealing with possessory interest, both the task force report and the Inspector General's report. The Service will review the recommendations prior to determination of the best course of action to take.

FORT MASON CENTER/RESIDENT SPACE

Fort Mason is the headquarters for the Golden Gate National Recreation Area and is located on a bluff above San Francisco Bay. The Fort Mason Foundation was founded in 1976 to administer some of the buildings and piers located in the Lower Fort Mason area "as low-cost public use space to assist nonprofit organizations in their efforts to provide a broad range of cultural, educational, and recreational activities within these facilities at little or no cost to the public."

The Foundation currently has 50 resident nonprofit and support groups paying $.50 to $.57 per square foot monthly rental, and an average of 450 nonresident groups that utilize the facilities annually.

During the 13 year period, the Foundation has raised and spent $9.0 million on capital improvements and over $1.9 million on routine maintenance of the government facilities it manages.

19. Question: How does this rental rate compare to comparable private rates on the San Francisco Bay?

Answer: Rates are 50 percent of market value. The purpose of this is to enable nonprofit organizations to provide minimum or no cost programs with wide popular appeal to different ethnic, age, cultural and educational groups.

20. Question: How did the Park Service arrive at the rental rates?

Answer: The rental rates are required to be modest, with the objective being to charge as fair rent as possible while still operating an effective center that provides programs in accordance with the requirements of the cooperative agreement. Consequently, the rates were established at a break-even point for warehouse type space. Earned income pays for 100 percent of the day-to-day operating expenses.

21. Question: Are there restrictions on the amount and/or type of political activities which can be undertaken by residents?

Answer: All activities must adhere to the requirements set forth in the Cooperative Agreement which limits the Foundation's discretion regarding the scope of services to be offered. The purpose of the center is to maintain the warehouse and piers located at lower Fort Mason as low-cost public use space and to assist nonprofit organizations in their efforts to provide a broad range of cultural, educational, and recreational activities within these facilities at little or no cost to the public.

Programs and uses authorized by the Foundation, in carrying out the terms of this agreement, must be in keeping with the legislative purpose of Golden Gate National Recreation Area and are subject to the laws governing the National Park Service. The primary purpose of Golden Gate National Recreation Area is "to preserve for public use and enjoyment certain areas in Marin, San Francisco and San Mateo Counties, California, possessing outstanding natural, historic, scenic and recreational values,..." and the National Park Service shall administer these areas in "a manner which will provide for recreation and educational opportunities consistent with sound principles of land use planning and management." Charged with this mandate, allowed political activities would only be those that would further the goals of Golden Gate National Recreation Area, or those permitted by the laws and regulations that govern National Park Service areas. The park maintains a very close collaboration and/or participation in the management of all program activities and changes associated with the center and reserve the right to immediately suspend or terminate activities if the conditions of this agreement are not met.

22. Question: How many sites similar to Fort Mason are there in the Park System?

Answer: Within the park there are other similar cooperative agreements but they are of lesser scope. Examples are the California Marine Mammal Center and the Headlands Institute. Within the National Park Service, programs of this nature can be found at Wolf Trap Farm Park for the Performing Arts and at Turkey Run Park within the George Washington Memorial Parkway. There are numerous other examples found in other National Park Service areas.

23. Question: How do the capital improvement and maintenance activities undertaken by the Foundation compare to those of concessionaires?

Answer: The concessions program was used as a model. The Foundation was required to raise $7 million from private sources as a condition of the 20-year agreement.

24. Question: Do you contemplate a similar situation if the Presidio is transferred to the Park Service?

Answer: The National Park Service is initiating a 2-year planning process to determine the future conceptual uses of the Presidio facilities. There will be many possibilities explored, this model being just one.

HISTORIC PRESERVATION

It was interesting to see the somewhat unique interplay between the Park Service, the Department, and the Office of Management and Budget during this budget cycle.

Before sending your budget on to the OMB, the Department increased the amount the Park Service had requested for Park Management (+$18 million), Park Operations (+$20 million) and Construction ($42 million).

25. Question: Why did the Department feel your request for these programs was inadequate?

Answer: Most of the changes contained in the Departmental passback concerned maintenance and infrastructure requirements, which the Secretary has proposed to combine into an initiative entitled "Maintaining Infrastructure--Legacy 99." The genesis of this initiative did not take final form until after the Service had submitted its 1991 budget to the Department. This is not to say that the Service had ignored these important needs in its submission. Rather, the Service had proposed modest increases in the Regional Maintenance Programs (+$37.5 million) and requested a construction program of over $80 million. In addition, the Service had devoted a large part of the budget allowance available to park operations (+$33.2 million) and science and research (+$17.25 million). With the added emphasis provided by the Secretary's initiative, the requests for maintenance and construction rehabilitation were expanded. It should be noted that the Department only increased the request for park operations by a net of $4.8 million, changing the mix through the elimination of park operational requests for resource management and the addition of a slightly larger operational maintenance component.

26. Question: Why were you unsuccessful in convincing OMB that park needs inside the boundaries were more important than needs outside the park boundaries?

Answer: The Service placed the highest priority on park operational requirements during its negotiations with OMB and was ultimately very successful in obtaining additional budgetary allowance to address these needs. In addition to the $18.8 million in specific park operational increases requested in the 1991 budget, the Service was able to continue funding in 1991 for $10.8 million in park operations added by the Congress in 1990. This total of $29.6 million for specific park operational requirements represents a significant step towards addressing park needs. The overall request of $1.1 billion by the National Park Service is the largest request in its history and this amount allows the Service to address a wide array of issues within park boundaries.

DENALI NATIONAL PARK AND PRESERVE

In the FY 90 Conference Report, the Committee directed the Park Service by May 1, 1990 to prepare a list of all private inholdings in Denali National Park, and to prepare a comprehensive resource management plan for the Kantishna region. This plan was to identify reasonable strategies for accommodating or resolving the conflicts between resource utilization and preservation.

In addition, to the extent the EIS is finalized as scheduled in October, the Committee also requested the Service to work with mining applicants on a cooperative basis in developing mining plans of operation which comply with regulations.

It is my understanding that the final EIS is currently at the printers and the proposed action in the FY 91 budget is to acquire all valid mining claims in Denali National Park, Wrangell-St. Elias National Park and Yukon-Charley Rivers National Preserve (pg. 93).

27. Question: What do you anticipate will be the total costs to purchase the 1,531 potential claims (1,003 are unpatented)?

Answer: Full acquisition costs will not be known until validity examinations are completed on unpatented claims, and hazardous materials surveys are completed for all claims, unpatented and patented. Current gross estimates for claims acquisition in the three park areas combined range from $33.5 million to $46 million, exclusive of potential hazardous materials issues. Should hazardous materials be found, this may substantially reduce net values.

28. Question: If money is not provided in the appropriations cycle, how will the Park Service proceed?

Answer: In the absence of funds for mining claim acquisition, the proposed action in the Environmental Impact Statement could not be implemented. The Service would evaluate all submitted completed plans of operations to reach a determination to approve or deny the operation. Plan denial might result in inverse condemnation actions by the operator. Acquisition as the proposed action was largely based on its being the preferable alternative to prolonged, and likely more expensive, litigation. Also, failure to implement the proposed action could pose legal questions concerning National Environmental Policy Act compliance, and the U.S. District Court Final Judgment and Stipulations.

29. Now that the EIS is final, how do you intend to proceed with the development of mining plans of operations?

Answer: After the Environmental Impact Statements are approved by the U.S. District Court, and pending acquisition of claims, the Service will process and evaluate all submitted complete plans of operations. Each of these will be evaluated using the standards in the Mining in the Parks Act regulations and the Environmental Impact Statement cumulative impact methodology as the basis for approval or denial.

SERVICEWIDE INCIDENT REPORTING SYSTEM

You have requested an additional $2.1 million for the development of a Servicewide Incident Report System (pg. 63). The budget argues that the Service is hindered by the absence of a Servicewide information management system that will meet the incident reporting requirements of the Uniform Crime Reporting Act of 1988 (P.L. 100-690).

The system is designed to provide a standardized format for collection and dissemination of data and will enhance the ability to document incidents and to record, analyze and assess investigative and intelligence information.

There may be an error in the justification but Public Law 100-690 is the Anti-Drug Abuse Act of 1988. Although that Act is lengthy, I have been unable to find a section which requires an incident reporting system.

30. Question: What are the requirements you are trying to fulfill?

Answer: There is a variety of requirements that need to be met. These, of course, include the mandate by the Uniform Federal Crime Reporting Act of 1988 as follows: Public Law 100-690, Title VII-Death Penalty and other Criminal and Law Enforcement Matters, Section 7000, Subtitle I. Provisions relating to the Federal Bureau of Investigation, Section 7332(a) "Uniform Federal Crime Reporting Act of 1988," Section (c)(2) "Reporting by Federal Agencies" requires that agencies within the Federal Government which routinely investigate complaints of criminal activity, shall report details about crime within their respective jurisdiction to the Attorney General in a **UNIFORM MANNER AND ON A FORM PRESCRIBED BY THE ATTORNEY GENERAL**. This manner and form, developed by the Federal Bureau of

Investigation, is known as the National Incident Based Reporting System (NIBRS). In order to meet this reporting requirement and to meet the format and content of the Bureau's developed system, a computerized data collection system is mandatory, and any system currently in place for criminal incident data collection that does not contain the required data fields, which may require as many as 52 data elements per criminal acts, would need a complete overhaul in order to satisfy the mandated reporting requirements. Further, the drug reporting requirements imposed by the Department of Interior, and the ability to track criminal investigations as mandated by a June 1988 Departmental Office of Inspector General (OIG) audit report on law enforcement activities, require the implementation of this system.

31. Question: How does the National Park Service currently handle these responsibilities? Is this an extension of the current system or a completely new system?

Answer: The NIBRS requirements are not currently being met. This request will provide for development of a new system to address these responsibilities. The National Park Service has developed prototype software to capture the required data elements for the Uniform Crime Report and is currently testing this software together with prototype criminal incident forms in selected parks. The Park Service's progress in complying with the NIBRS requirements is the most extensive in the Department. Drug reporting is currently handled by the Division of Ranger Activities which consolidates monthly drug reports received from Regions and compiles summary reports for the Department. This is a lengthy process which takes more than a week to accomplish on a monthly basis.

32. Question: What are the deficiencies of the current system?

Answer: The proposed Incident Reporting System will standardize the offense/incident coding system for all incidents enabling a more accurate assessment of criminal and service incidents throughout the Park System. This data will be useful as a management tool for law enforcement. The current manner of coding incidents is nonstandard, with similarities between some Regions but generally different.

The proposed system will streamline the annual reporting requirements for law enforcement, search and rescue, emergency medical service, drug incidents, visitor and employee injury incidents, motor vehicle accident incidents, and Archeological Resource Protection Act incidents. The system will enable the various annual reports to be produced by the program reports generator which will query, summarize, and print in whatever format requested, the numerous annual reports that now require hundreds of work hours and endless counting of park based incident records to produce. These capabilities do not exist in the current method of data collection.

The proposed system will provide a much higher degree of accuracy to the statistical information which is reported. It will enable real time inquiries that will eventually allow access vertically and, in the future, laterally across park and Regional lines. This rapid access to data bases will enhance criminal investigative activities and the sharing of criminal information. These capabilities do not exist in the current method of data collection.

The proposed system will satisfy the June 1988 Departmental Inspector General's audit requirements for a Servicewide information system that could track the status of criminal investigations. Current methods of tracking criminal investigations were judged faulty by the audit.

There is currently no system that meets the requirements of the "Uniform Federal Crime Reporting Act of 1988." These requirements are extensive and can only be met with a sophisticated data collection plan which currently does not exist in any form within the Service.

33. Question: What alternatives were analyzed besides this process?

Answer: Given the mandate to follow the Federal Bureau of Investigation's National Incident Based Reporting System program and the geographical dispersement of the national parks there were no other viable alternatives.

34a. Question: What are the long term costs of this system?

Answer: Long-term recurring costs, beyond the developmental stages in 1991 and 1992, will involve the salaries and benefits for one system operator in each Region and in the Washington Office, system maintenance, and the annual dial-up costs associated with the transfer of data from parks to Regions and to the Washington Office. These are estimated at approximately $750,000 annually on a Servicewide basis.

34b. Question: How will this system operate? Will all parks have computer terminals?

Answer: The system will be developed in phases. Phase I involves the development of a data base program for capturing the mandated criminal incident information required by the FBI. As this prototype is tested, its concepts will be expanded to include noncriminal incident data useful for park management activities. The master data base will reside in the National Park Service Washington Office with information to update this data base up-loaded from Regional Offices over telecommunications links from data bases residing on microcomputers. Similar up-loading of data will occur from selected park areas throughout the Service. Dedicated microcomputers will be placed in parks that meet predetermined workload criteria for data storage and number of records that can be expected to be entered. Parks that do not meet the minimum workload criteria will send their reports to a larger park within the same Region for standardized coding, data entry, and up-loading of information to the Regional data base.

The long-term expectations of this system are that it will significantly facilitate the data collection for recurring reports for a variety of disciplines, simplify the collection of management data from accident reports, incident reports for law enforcement, search and rescue, emergency medical service, standardize offense/incident coding throughout the Service thereby improving the accuracy and validity of statistical reports, satisfy the FBI mandated criminal reporting requirements, and provide park areas with a system that can be tailored to individual data collection needs and still meet the overall Servicewide data requirements.

HAZARDOUS WASTE PROGRAM

The Park Service has requested an additional $7.2 million in FY 91 for the Hazardous Waste Program (pg. 77). This request represents a proactive approach towards establishment of a base program for Servicewide management of identified and potential hazardous waste problems throughout the park system.

35. Question: Why did you determine that it was necessary to take a "proactive" stance?

Answer: The cleanup of hazardous materials is part of a major Secretarial initiative addressed in the fiscal year 1991 budget--"Legacy 99," a multiyear program focusing on the need to maintain the infrastructure of the National Park System. This request reflects a renewed commitment to dedicate resources towards hazardous materials management throughout the Park System and will enable the Service to take a more proactive approach in managing its hazardous materials program.

In the past, the lack of adequate base program funds has caused hazardous materials issues to be handled on a reactive or often crisis oriented basis, usually funded from within the park operating base by deferring other maintenance work. The Krejci Dump.Site at Cuyahoga Valley National Park Recreation Area is the most visible Park Service hazardous waste issue to be funded in recent years, with initial funding provided in fiscal year 1988 under "Superfund" as a reimbursable emergency response action by the Environmental Protection Agency. Approximately $15.3 million will be spent over a 3-year period to cleanup this 50-acre site.

The systematic identification and investigation of potential hazardous materials situations on a Servicewide basis, will enable the Service to plan and develop responsive programs and actions. Consistent with the goal of "Legacy 99," this will eventually result in the cleanup of all hazardous waste sites throughout the System. This will also reduce the possibility of sites going unrecognized for long periods of time resulting in increased human health and natural and cultural resources impacts, remedial costs and agency liability.

36. Question: What is the financial extent of the problem?

Answer: The full financial extent of the hazardous waste problem cannot be determined at this time. The Service is currently in the process of making such assessments. Completed preliminary assessments and site investigations will be the primary sources of information for development of cost estimates associated with hazardous materials cleanup and any appropriate remedial action which may be necessary. During fiscal year 1991, preliminary assessments and site investigations will be done on sites that were previously targeted as potential environmental concerns in a Servicewide survey conducted in 1988. These are expected to be completed by the end of fiscal year 1992, at which time the Service will have a more accurate assessment of the actual number of hazardous waste sites and associated cleanup costs.

PADRE ISLAND NATIONAL SEASHORE

An additional $500,000 is requested in fiscal year 1991 for the removal and disposition of hazardous material that washes ashore on the Padre Island National Seashore (pg. 78). The budget states that approximately 200 to 300 55-gallon drums wash ashore annually. The funds requested in fiscal year 1991 are for a contractor to pick up, analyze and dispose of the drums.

37. Question: What is the source of the drums washing ashore?

Answer: Identification of the specific sources of the drums washing ashore has been very difficult to determine. The Service believes that off-shore oil and gas exploration and development are the principal sources of drums washing ashore at Padre Island. Some dumping may also be occurring.

The natural currents on the Gulf are such that containers entering the waters of either the west coast of Florida or the east coast of Mexico and other Caribbean nations can and do end up on Padre Island.

Containers are required to be permanently marked by the Minerals Management Service for all operations under their jurisdiction on the outer Continental Shelf. However, the retrieved containers are usually in such a corroded condition from exposure to salt water that identification cannot be made.

38. Question: Is there a way to recoup any of these costs if the violator is identified?

Answer: In the past, when ownership could be traced, the Coast Guard contacted the owner or manufacturer and requested that they retrieve and dispose of the drums.

The Park Service intends to pursue cost recovery action when the identity of the potential responsible party can be determined. The Environmental Protection Agency will conduct a study to identify the potential responsible party through chemical analysis of the materials and other methods in an attempt to trace or identify the generator or user.

NATIONAL NATURAL LANDMARKS

In a November 28, 1989 memo from the Director of the National Park Service to all Regional Directors, a one-year moratorium was placed on all activities relating to the nomination by NPS of any new

National Natural Landmarks. This action was taken after the Senators from Maine complained that landowner rights were not adequately protected in consideration of the evaluation of the Cutler Coastline in Maine.

During the one-year moratorium, no nominations will be made but site inspections will continue.

39. Question: What is the status of the review?

Answer: During this one-year moratorium, the Service will not undertake any actions relating to the evaluation, nomination, or designation of new sites for National Natural Landmarks (NNL) status. The Service will finish the processing of those evaluations and nominations in progress before the moratorium, but only for those sites where all landowner notification has been completed and where we are assured that all landowners have given their consent to the consideration of their property for National Natural Landmarks status. The decision to forward any pending nominations of previously evaluated and qualified sites to the Secretary for possible designation will be made by the Director.

The review which the Service is undertaking of the National Natural Landmark program includes the following major components:

> A review of the existing program regulations to make any needed modifications, particularly in the areas of landowner notification and landowner consent is being undertaken. Specifically, provisions will be included to ensure that sites are not processed for designation unless all landowners involved have been properly notified and have indicated their concurrence with the process. Provision will also be made for owners of previously designated National Natural Landmarks who no longer wish their property to be so designated to have their property removed from the National Registry of Natural Landmarks. The regulations as revised will be made available to the public for a 90-day comment period on or about September 1, 1990. A series of public meetings will also be held at selected locations around the country during the 90-day review period. The regulations are scheduled to be published in final by January 31, 1991.
>
> Development of a National Natural Landmarks program handbook which will provide clear and consistent guidance to all participants in the program on program procedures is scheduled to be completed immediately after the final regulations are completed.
>
> Identifying the current owners of designated National Natural Landmarks and contacting them to inform them of their rights in the program is also being undertaken. Contact of owners of designated sites is scheduled to be completed by December 1, 1990.

KENNEDY CENTER GARAGE

In FY 90 $4.0 million was provided to begin repairs of the garage at the Kennedy Center. The total cost of this project is anticipated to be $15 million with additional funding provided in future fiscal years.

40. Question: What is the status of the project?

Answer: Emergency repairs are underway to correct tripping hazards on all three levels of the garage. Interim repairs to cracks on levels A and C will be taking place soon.

Plans and specifications for repairs to parking garage level B are complete and are being printed. The contract will be awarded in late June with work starting in mid-July.

The work will restore approximately two-thirds of the bad concrete on level B, and the remaining area will be added to the work to be accomplished on levels A and C.

The architectural/engineering firm of Rath, Rath and Johnson will now start on the construction drawings for levels A and C. Construction documents for these levels should be complete by mid-October 1990.

The current total estimate for repair of the garage is $16 million. An amount of $4 million was provided in 1990, and a total of $3 million has been requested to continue the work in 1991.

QUESTION SUBMITTED BY SENATOR THAD COCHRAN

NATCHEZ NATIONAL HISTORICAL PARK

1. Question: It is my understanding that a team of Park Service planners is in Natchez working on the general management plan. How much do you estimate is necessary to continue this process through FY 1991?

Answer: An initial scoping meeting for the Natchez General Management Plan was held during the week of April 16, 1990. A detailed task directive and cost estimate have not yet been approved. We estimate that $100,000 would be required in fiscal year 1991.

QUESTIONS SUBMITTED BY SENATOR DON NICKLES

CHICKASAW NATIONAL RECREATION AREA, SULPHUR, OKLAHOMA

The Chickasaw National Recreation Area is one of the oldest and most heavily visited NPS units in the Southwest Region. However, despite its increasing popularity, the park has no visitor center. Such a facility is needed to provide an information and orientation center for park visitors and for administrative offices.

The Sulphur Chamber of Commerce has undertaken a major effort to coordinate the construction of a visitor center at the Chickasaw NRA. The Chamber is seeking $75,000 in Federal funds to plan the center which would be constructed with non-Federal funding. A 7,000 square-foot facility is required.

1. Question: What is the capability of the National Park Service to provide $75,000 in fiscal year 1991 funding for this project?

Answer: The National Park Service maintains a Servicewide priority listing of our highest priority construction needs. The proposed Chickasaw project does not currently have a Servicewide priority which means that the Service has identified over $2 billion in higher priority construction needs. Consequently, no planning funding is available for this project in fiscal year 1991.

2. Question: Is $75,000 sufficient to fund planning for a visitor center of this size?

Answer: The Service estimates that $100,000 would be required to provide preliminary plans for this project. A very tentative estimate for final design of this facility is estimated to total $200,000. This funding would provide for basic concept planning and a feasibility study for the construction of a visitor center/headquarters facility for the park. The plan would include a determination of the site or sites, as well as the extent of Federal and non-Federal involvement. Both the city of Sulphur, Oklahoma, and the Chickasaw Nation would be involved in the planning.

LAKE OF THE ARBUCKLES

The Guy Sandy parking area serves the west side of the Lake of the Arbuckles and is the primary access point for visitors from Interstate-35. The parking area is very small and is frequently overcrowded.

3. Question: What is the capability of the NPS to provide $200,000 in fiscal year 1991 funding to plan and design an enlargement of this facility?

Answer: Since the expansion of the parking area does not carry a Servicewide priority, this work is not funded in fiscal year 1991.

ROAD REPAIR

The fiscal year 1990 NPS appropriation included $2,200,000 for repair of roads in the Chickasaw NRA.

4. Question: What is the status of this project?

Answer: Final design is now underway by the Federal Highway Administration. A contract will be advertised in June 1990 and should be awarded in August 1990. Construction will begin in the fall. This work will reconstruct roads in the Buckhorn area of the park.

QUESTIONS SUBMITTED BY SENATOR WARREN RUDMAN

AUGUSTUS SAINT-GAUDENS NATIONAL HISTORIC SITE

1. Question: As you know last year the accompanying report to the FY90 Interior Appropriations bill included language directing the Park Service to conduct an assessment of the operations and maintenance needs at the Augustus Saint-Gaudens National Historic Site in Cornish, New Hampshire. Has that report been completed and if so what are the major findings?

Answer: The report has been completed by the National Park Service and has been forwarded to the Congress. The report has identified some aspects of park operations which could benefit from increased resources, both on an ongoing and a one-time basis. The report also identified one capital development project that could benefit the park. This project involves the construction of a new visitor center, museum gallery and parking area and is currently without a Servicewide priority.

2. Question: I received a draft copy of the report and it is my interpretation that the Site is badly in need of an increase in its operations funding and an upgrade in its facilities in order to provide basic programming? Is this your assessment?

Answer: For fiscal year 1991, the Service has requested increases to the operating base for Saint-Gaudens National Historic Site totaling $90,500. The Service believes that the proposed increases, which would raise the annual operations base of the park by almost 30 percent, would address the most serious operational concerns at the park. In addition, increases have also been requested in 1991 for regionally-based maintenance programs which could, as Regional priorities dictate, address the one-time facility rehabilitation and preservation needs identified in the report. Given other competing priorities within the Park System, the Service would not at this time recommend further funding, beyond that already proposed for fiscal year 1991, at Saint-Gaudens National Historic Site.

3. Question: The Park Service has identified a construction project at the site which is estimated to cost $5,000,000. Why is this project necessary?.

Answer: This project would provide for the construction of a new, environmentally controlled exhibit area. The facility would help protect and enhance the exhibition of the site's collection of Saint-Gaudens art works. Most notable among these works are the "Lincoln" and the original plaster cast of the "Shaw Memorial," the outstanding monument to the Black troops of the Civil War. The project would also provide for a visitor services and orientation area, removing those activities from "Aspet," the historic home of Saint-Gaudens. This action would aid both the preservation and the interpretation of that structure. The new area would include an adequate number of sanitation facilities and would provide room for educational groups, fee collection activities, exhibits and audiovisual programs. Finally, the project would provide an adequate level of parking for the site, with spaces for 50 cars and 3 buses.

4a. Question: How many people visit the site annually?

Answer: In 1989, approximately 44,000 people visited the site.

4b. Question: Has the number been growing in recent years?

Answer: From 1986 to 1988 visitation was between 30,000 and 35,000 annually. The jump to 44,000 in 1989 represented an increase which was, in part, a result of the reopening of the bridge to Vermont which had been closed for 2 years.

4c. Question: Do you expect the visitation to the site to continue to grow?

Answer: Visitation in 1990 is expected to grow by approximately 10 percent, to about 50,000.

4d. Question: How does this compare to other National Historic Sites in the Region?

Answer: This growth is in line with all of the areas in the Region, which grew by 10 percent between 1988 and 1989.

5. Question: How does the funding for the Saint-Gaudens site compare to other parks in the Region? Is there more favorable funding treatment given to other parks? If so, what is the reason for the preferential treatment?

Answer: The President's budget for fiscal year 1991 requests a base operating budget of $405,200 for Saint-Gaudens. Included in this amount is a proposed increase of $83,000 to address operational requirements at the park. While the base for Saint-Gaudens is one of the smaller operating budgets in the Region, it is in line with the size, complexity and visitation at the site. There are 10 other National Park Service areas in the Region which have operating budgets that are less than that of Saint-Gaudens.

NATIONAL RECREATION AND PRESERVATION PROGRAMS

6. The proposed fiscal year 1991 Administration budget includes a cut of $3.8 million over the levels appropriated in fiscal year 1990 for the National Recreation and Preservation Programs, which includes the Rivers and Trails Conservation Programs. How does the Administration justify cutting this important program?

Answer: The Administration believes that direct Federal involvement in State and local river and trail programs is not warranted as programs, funds and professional expertise are available sufficiently at the State and local government levels to continue conservation work for non-Federal rivers and trails. State and local government have traditionally carried out their own conservation work on non-Federal areas. The inauguration of Federal assistance was meant to augment the efforts of State and local governments for non-Federal areas and not to be regarded as a principal source of assistance. While the absence of Federal technical assistance could slow down ongoing river and trail conservation work by State and local governments, the programs would continue. Continuing to provide technical assistance and advice need not be specially funded in dedicated programs. Federal land managers and conservation specialists stationed in national parks, forests, and wildlife refuges are always available to advise State and local managers located near them on a variety of conservation matters. Potentially, Federal financial assistance could be resumed at a later time when the Federal budget situation has improved.

7a. Question: As I know you are aware, Congress is currently considering authorizing several studies of rivers to determine their eligibility for inclusion in the National Wild and Scenic Rivers System. Specifically, there are two rivers and possibly a third being considered in the State of New Hampshire. Were Congress to authorize these studies this year, what funding level would be required in fiscal year 1991 to commence these studies?

Answer: If the Pemigewassett and Merrimack Rivers are authorized for study this year, each would require $90,000 in fiscal year 1991 to initiate a full effort. The same amount, $90,000, would be required for a study of the Lamprey River.

7b. Question: Further, what would the projected costs be to complete these studies?

Answer: To complete the studies, an additional $160,000 would be required for each for the three rivers. The total requirement for each study is $250,000.

QUESTIONS SUBMITTED BY SENATOR PETE V. DOMENICI

MANASSAS NATIONAL BATTLEFIELD PARK

BACKGROUND

The 1987 technical corrections tax act provided for the legislative taking of 542 acres adjacent to the Manassas Battlefield Park. This law provided that the acquisition would be funded from a Justice Department permanent and indefinite appropriation, the claims and

Judgement fund. Estimates for the cost of acquiring the tract have varied from $13 million to over $200 million.

At the time of the debate over this legislation, the Administration estimated the taking would cost the Federal Government $65 million in FY 1989. (CBO would not provide a precise estimate.)

The land described in the technical corrections legislation included three private homes that have been occupied for years. This tract also included a major power line and a garden center. It is unclear how these homes and facilities will be affected by the legislative taking.

1. Question: What is the status of the Manassas land acquisition?

Answer: On November 10, 1988, Public Law 100-647 authorized a boundary change at Manassas National Battlefield Park and transferred title to all land added by the boundary change to the Federal Government by a legislative taking. A total of approximately 600 acres was added to the park. The legislative taking included three large properties owned by developers and three residential tracts. Payment for the legislative taking will be derived from the Claims and Judgments appropriation. On the date of taking, no funds were deposited for the taking since just compensation had not been determined.

All three of the small residential tracts have been appraised and negotiations with the owners have begun. One tract (Saxer) has been settled for $230,000, while negotiators continue to seek settlement on the other two tracts (Peterson and Edwards).

A-settlement has been reached on the 135-acre tract owned by William Center Limited Partnership and 15 acres owned by Northern Virginia Homes. Negotiations resulted in a settlement in the amount of $34,059,000, inclusive of interest. The third large property known as the Hazel/Peterson tract (392 acres) is owned by York Limited Partnership. The appraisal of the property is expected to be completed by June 1990. Meanwhile, negotiations with the owners have begun. Remaining to be appraised is an easement owned by Virginia Electric Power Company.

Because lawsuits have been filed against the United States by parties affected by the legislative taking, the Department of Justice is now the lead negotiator for the United States in this matter. In November 1989, the Hazel/Peterson Companies and two other William Center developers filed suits in the U.S. Court of Claims for compensation due as a result of the legislative taking. Additional suits have also been filed by Prince William County and by the Marriott Corporation. The resolution of these suits is being addressed in the negotiations.

Excluding the lands taken by Public Law 100-647, dated November 10, 1988, interests in an additional 40 tracts containing 513 acres of privately owned land will remain to be acquired at the park after fiscal year 1990. As of February 28, appropriated funds in the amount of $184,717 remain unobligated.

2. Question: What are your current projections of the cost of acquiring this property and settling all claims associated with the Manassas taking?

Answer: It is expected that compensation paid for all lands and interests taken by Public Law 100-647, dated November 10, 1988, will total approximately $100 million. That amount, however, is subject to change should negotiations be protracted or if, in the absence of a negotiated settlement, the Federal District Court awards compensation in variance with our estimates.

3. Question: When do you expect to complete the acquisition of this property?

Answer: Title to all properties affected by the legislative taking was acquired by the United States on the date of the taking, November 10, 1988. Only the determination of just compensation remains to be completed. When settlements are reached with all owners, prompt payment of compensation will be made, hopefully in fiscal year 1990. If negotiations are unsuccessful, the payment of compensation will be dependent on the scheduling of necessary court proceedings.

4. Question: There were press reports that a couple of families would be forced out of their homes because of the legislative taking of this property. Is this the case?

Answer: Upon enactment of Public Law 100-647 on November 10, 1988, title to three residential tracts included in the legislative taking was vested in the United States. One tract has been settled for $230,000, while negotiators continue to seek settlement of the other two tracts. Attempts will be made to arrange life estates or other use-and-occupancy terms with the owner-occupants of the residential tracts.

QUESTIONS SUBMITTED BY SENATOR MARK O. HATFIELD

CRATER LAKE NATIONAL PARK

1. Question: The Park Service's FY 1991 budget request includes $1 million for construction at Crater Lake National Park in Oregon. Although I am pleased that the Administration has finally decided to include Crater Lake Lodge in its budget, I am disappointed by the small amount that was requested. In light of the fact that the Appropriations Committees provided $1.761 million and $2.241 million for planning in fiscal years 1989 and 1990, respectively, and an additional $50,000 in construction funds in FY 1990, and because Crater Lake Lodge was condemned and closed to visitors last June, the $1 million requested for FY 1991 is most certainly inadequate. At the rate of $1 million per year,

it will take over thirty years to complete this $38 million project.

Please provide the Subcommittee with a full explanation of how the previous appropriations for this project have been utilized, and how the requested $1 million in FY 1991 will be spent. Also, please provide the Subcommittee with the Park Service's latest time line for the project, and when the entire project is expected to be completed.

Answer: The fiscal year 1989 appropriation of $1.761 million was used for construction of wastewater treatment improvements in the Munson Valley, advance planning for parking relocation and the road, sewer, and utility systems for the Rim Village area, preliminary design work for the new activity center/hotel and for the stabilization and repairs of the historic lodge, and an Historic Landscape Plan of the Rim Village area.

The fiscal year 1990 appropriation of $2.241 million is being utilized for accelerated planning and design for: the rehabilitation of the historic lodge; stabilization and repairs of the historic lodge; construction of the new activity center/hotel; construction of road, sewer, utility systems, relocated parking and restoration of rim area. The $50,000 for shoring of the historic lodge is being held until it can be combined with a phase of the fiscal year 1991 construction request. The Service reassessed the feasibility of shoring the Great Hall given the potential damage to the structure and the risk to workers during the shoring installation. It was determined that, since the building was closed to the public, the funds would be better utilized in the rehabilitation of the lodge.

The fiscal year 1991 request of $1.0 million will be used to construct sewer, electric power and telephone lines from Rim Village to Munson Valley.

Our best current estimate is that the entire project could be complete by 1999, assuming additional funds are appropriated in the amount identified for each future fiscal year. A revised schedule reflecting the amount actually requested in the 1991 budget follows:

Crater Lake National Park - Rim Village Development - Funding Sequence FY 1990 - FY 1995

($ in 000's)

	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95
New Sewage System, Planning and Design:	234	60	--	--	--	--
Construction:	--	1,000	--	--	--	--
Access Roads, Upper and Lower Parking Areas, Comfort Station Planning and Design:	--	--	150	40	--	--
Construction:	--	--	--	2,000	--	--
Stabilization and Interim Repairs, Lodge Planning and Design:	400	200	75	--	--	--
Construction:	50	--	3,180	--	--	--
New Hotel/Activity Center: Planning and Design:	792	110	1,050	350	--	--
Construction:	--	--	--	17,300	--	--

Crater Lake National Park - Rim Village Development - Funding Sequence FY 1990 - FY 1995

($ in 000's)

		FY 90	FY 91	FY 92	FY 93	FY 94	FY 95
Second Stage Infrastructure, Mazama Cabins:							
Planning and Design:		--	20	25	5	--	--
Construction:		--	--	--	355	--	--
Partial Rim Restoration:							
Planning and Design:		10	20	50	60	25	--
Construction:		--	--	--	--	1,100	--
Rehabilitate Crater Lake Lodge:							
Planning and Design:		790	460	150	--	--	--
Construction:		--	--	6,800	--	--	--
Final Stage, Rim Restoration:							
Planning and Design:		15	--	--	30	15	10
Construction:		--	--	--	--	--	300
TOTAL Planning and Design:	(5,146)	2,241	870	1,500	485	40	10
Construction:	(32,085)	50	1,000	9,980	19,655	1,100	300
Grand Total:	(37,231)	2,291	1,870	11,480	20,140	1,140	310

2. Question: The closure of Crater Lake Lodge to all visitors last June has placed the park concessionaires (the operators of the lodge) in a difficult financial position - at no fault of their own. Please provide the Subcommittee with an explanation of why this situation was allowed to happen, and your plans to rectify this situation and compensate the concessionaires. Also, please provide the Subcommittee with the terms and conditions of the contract between the Park Service and the concessionaires for the operation of Crater Lake Lodge.

Answer: On May 25, 1989, a public announcement was made by Regional Director Charles H. Odegaard to close the historic lodge for the purposes of protecting visitors based on a recommendation by a consulting architectural/engineering firm which indicated that the building has numerous safety and structural deficiencies. Other associated problems included an overloaded electrical system and an unreliable fire sprinkler system. The Government-owned building was not designed properly in 1913 to handle the extreme stress of the mountain-top environment at the rim of Crater Lake. Battered by heavy winter snow, the lodge was weakened to the point that the Great Hall could collapse through use, or in the event of high winds or heavy snows.

This decision to close the historic lodge was based on a review of information gathered during years of public meetings, surveys, wind tunnel tests, engineering studies, and consultation with elected officials, interested organizations, and the people of the State of Oregon. Planning for necessary stabilization and restoration is currently underway by an architectural/engineering firm in Portland contracted by the National Park Service. Restoration could begin in 1992. Historic Crater Lake Lodge will be fully rehabilitated for continued use as a summer lodge and dining facility. The exterior and some of the interior public spaces will be rehabilitated and preserved, and most modern intrusions will be eliminated. Approximately 80 guest rooms and four to six employee rooms will be provided. The parking area will be redesigned to retain the historic character of the landscape and to accommodate 100 guest vehicles. A new access road, following former picnic area roads, will facilitate removal of existing lodge traffic from the rim.

The National Park Service has met with the concessioner to discuss the issue of compensation for losses that resulted due to a closure of a portion of this operation. A claim for damages/losses from the concessioner is pending.

The term of the contract is 30 years from November 1, 1967, through October 31, 1997. The concessioner pays a franchise fee of 2 percent of gross receipts. The concessioner provides lodging accommodations, food and beverage facilities and services, transportation facilities and services, automotive facilities and services, boat services on Crater Lake, general merchandise sales and services and operates the Government-owned Mazama campgrounds.

JOHN DAY FOSSIL BEDS NATIONAL MONUMENT

3. Question: The FY 1990 Interior Appropriations Bill provided $360,000 in planning money for a visitor center for the John Day Fossil Beds National Monument in Oregon. Please provide the subcommittee with an explanation of how these funds were spent. Does the Park Service have an estimated completion date for this project?

Answer: Preliminary site selection for the visitor center has been made and initial design efforts are underway. To date, a total of $159,000 has been spent on preliminary design work. The remaining funds will be used for exhibit planning and production and to initiate project planning when the final preliminary design has been approved. The current estimate of $334,000 in addition to the $360,000 previously made available will be needed to complete planning. The project could be completed in 1994 if the necessary additional planning was available in fiscal year 1991 and construction funds were appropriated in fiscal year 1992.

FRANKLIN DELANO ROOSEVELT MEMORIAL

4. Question: Please provide the subcommittee with an update on the progress of the Franklin Delano Roosevelt Memorial. Is it the Park Service's intention to proceed expeditiously on this project?

Answer: All funds appropriated for the Franklin Delano Roosevelt Memorial are available for the project, as directed by language in the fiscal year 1990 Dire Emergency Appropriations bill. The Park Service is currently considering some redesign of the memorial, as called for by the Commission of Fine Arts.

QUESTIONS SUBMITTED BY SENATOR FRANK R. LAUTENBERG

DELAWARE WATER GAP NATIONAL RECREATION AREA

NATIONAL RECREATION AREA BOUNDARY

When the boundary of the Delaware Water Gap National Recreation Area was redrawn, approximately 185.22 acres of national parkland in Sandystone and Montague Townships were placed outside of the new boundary. According to the Park Service, the only land that it can dispose of, is land that it owns outside a recreation or park area.

1. Question: Why was the NRA's boundary redrawn to exclude existing federally owned land?

Answer: This boundary revision was a result of the tabling of the Tooks Island Dam Project. Tract 10627 consisting of 96.54 acres and tract 10800-1 consisting of 95.53 acres were transferred to the National Park Service from the Corps of Engineers in order to relocate Route 209 in preparation for construction of the dam. The decision not to build the dam eliminated the need to relocate the road, making the land superfluous to the park's needs. The boundary was revised accordingly and the superfluous land excluded.

2. Question: What does the Park Service plan to do with the land that is now outside the NRA's boundary?

Answer: The Park Service plans to use this land for exchange purposes for land that is non-Federal and within the boundaries of the park.

3a. Question: Is there any validity to the assertion that the Park Service has plans to trade the 185.22 acres in return for 4.53 acres closer to the center of the NRA?

Answer: It is true that the Park Service would like to exchange the land outside the park boundary for land inside the park. While informal discussions have been held with Mr. Guy Luna, who owns approximately 4.5 acres in which the Park Service is interested, the final exchange would likely have to involve more than the 4.5 acres currently owned by Mr. Luna. This would be the case even though the land currently owned by Mr. Luna is riverfront acreage and is valued significantly higher than the land the Service is attempting to exchange. By law, the values of the properties to be exchanged must be approximately equal, or if they are not approximately equal, the values must be equalized by the payment of cash. In these situations, every effort is made to ensure that the equalizing monies received do not exceed 25 percent of the value of the National Park Service property exchanged.

3b. Question: If so, what steps have been taken with regard to this transfer?

Answer: The informal discussions with Mr. Luna are the only steps taken thus far. As part of the exchange process, the Service would proceed with an environmental assessment which would be put out for public review. One condition of any potential exchange would be the retention of a conservation easement which would ensure that any future development on the exchanged property would not be adverse to the national recreation area or the Delaware River.

3c. Question: If not, what steps have been taken to obtain an interested State, county or local governmental entity to insure the conservation of this land?

Answer: No steps have been taken at this time. It is the intention of the National Park Service to retain the lands outside the boundary of the park for exchange purposes in the best interest of the Government, subject to appropriate conservation easements.

WEYGADT VISITOR CENTER

4. Question: What is the status of planning for the visitor center?

Answer: An amount of $300,000 for advance planning was appropriated in fiscal year 1990. A planning team has been assembled for the project. Survey crews are presently onsite to accomplish an accurate topographic and physical structure survey. The Denver Service Center and park staff are developing a detailed statement of needs to use in creating design alternatives. The planning team will meet onsite during May 1990 to begin formulating alternative designs.

5. Question: When does the Park Service anticipate commencing construction of the facility?

Answer: Construction could not begin until 1 year after comprehensive design and drawings were funded. Actual construction would take 2 or 3 years.

WATERGATE CAMPGROUND

6. Question: What is the status of the implementation of basic improvements to the Watergate Campground Area's facilities, parking lot, and entrance station?

Answer: The Watergate facility is not a campground but a day use picnic area surrounded by a series of existing manmade lakes. The Service is presently completing comprehensive design drawings. Construction documents will be completed this summer with construction anticipated to begin by the late fall of 1990. The improvements will include a new paved entrance road, a paved parking area for 100 cars, access from the parking lot to restrooms and picnic area in compliance with accessibility standards and a permanent restroom facility to replace the existing portable chemical toilets.

SANDY HOOK/GATEWAY NATIONAL RECREATION MANAGEMENT PLAN

During the War of 1812, soldiers stationed at Fort Hancock, New Jersey, vigilantly protected the New York Harbor from the British. The fort's buildings, as well as a piece of America's heritage, are rapidly deteriorating. The preservation of this historic resource is essential. I understand that the National Park Service has proposed to achieve this goal through commercialization.

7. Question: Has a commercialization plan been implemented at any other national park holdings? If so, please detail its implementation. If not, what type of model will be used to develop the plan?

Answer: The National Park Service proposal might more properly be referred to as a historic leasing arrangement, as allowed under section 111 of the Historic Preservation Act of 1966, as amended. Sandy Hook would not be the first area within the National Park System to initiate historic leases as authorized in section 111. Similar proposals, albeit on a smaller scale, have been implemented at Lowell National Historical Park, Minuteman National Historical Park, Fire Island National Seashore and Cuyahoga Valley National Recreation Area. Major programs, similar to Sandy Hook, are proceeding for Statue of Liberty/Ellis Island National Monument and Hot Springs National Park.

8. Question: What other options for the restoration of this historic resource have been investigated? Please detail.

Answer: The General Management Plan amendment evaluates and updates planning, design and management strategies for the Sandy Hook Unit to ensure that the park's resource management and visitor use programs reflect the current Administration's policies and economic realities.

The General Management Plan was completed in 1979 and anticipated rehabilitation of facilities within Fort Hancock at Federal expense. Federal dollars necessary to complete this rehabilitation have not become available over the 11 years since the original plan was completed. It has, therefore, been the position of the National Park Service that, absent Federal investment and in order to carry out the stewardship responsibilities for the preservation and upkeep of these properties, another method for capital infusion is necessary.

The amendment to the General Management Plan notes that if the leasing of historic buildings fails to generate adequate or appropriate interest, shorter term leases with lower levels of investment would be used as a means to maintain buildings for as long as possible. It is the opinion of the Service that this method of preservation will only slow down the deterioration of the buildings, not reverse it, as would be the case with the long-term leases. At last resort, the Service would consider selective demolition of buildings at such time as no alternative treatments are feasible and the structures are no longer safe.

9. Question: Is the National Park Service legally able to turn Federal resources over to private, commercial entities that would limit access to the general public?

Answer: Section 111 of the Historic Preservation Act of 1966, as amended, provides legal authority for the Service to enter into leases with private, commercial, public and other organizations and individuals for the rehabilitation and occupancy of historic structures. Though terms of the leases may limit public access, it is the policy of the Service to provide as much accessibility as possible.

PARK INFRASTRUCTURE

10. Question: What is the status of the construction of the backup water well, a preventative safety measure?

Answer: Subsequent review by the Denver Service Center indicated that less intensive and less costly efforts could be undertaken to rehabilitate the existing well. These efforts include replacing well components, the well pump and other pumphouse equipment. Plans and specifications are currently being developed. The Service expects all work to be completed within 60 to 90 days.

11. Question: What is the status of the design of the bike path to connect the park facilities? Please detail what is necessary to implement the design.

Answer: The design of a bike path to connect park facilities and to provide an alternate means of public access was proposed in the General Management Plan amendment. The Service estimates that $400,000 is necessary to complete design efforts.

12. Question: Please evaluate existing park infrastructure and detail the projected needs for the future operations of the park.

Answer: Most utilities within Sandy Hook were constructed between the turn-of-the-century and 1945. Today, these facilities are in generally poor condition requiring considerable improvement and updating to alleviate operational problems and hazardous conditions.

The National Park Service lacks complete information on conditions and potential long-term demand. Further study, estimated at a cost of $400,000, would be required to thoroughly evaluate all electric, sewer, water and telephone systems.

The rehabilitation of buildings in the southern portion of the park and construction of new beach centers and related facilities for the northern beaches will place additional demands on staff. Furthermore, the proposed rehabilitation of facilities within Fort Hancock will add to the unit's staffing and funding needs.

A total of $900,000 is needed to restore staff and operational funding which has eroded over time. An estimated additional $955,000 is required to adequately staff and operate potential new facilities and programs.

NORTH END REDEVELOPMENT

In preparation for the new beach centers along the north end of the park, funds were provided for parking and road improvements in this section of the park

13. Question: What is the status of north end parking and road improvements? Please evaluate the proposed plans for north end beach development and detail what will be needed to complete it.

Answer: Funds to complete plans and designs for beach centers, parking and road improvements in the north end of the park were included in the fiscal year 1989 budget. The Denver Service Center has selected an architectural/engineering firm and will begin the design process in the next month.

Design work is projected for completion by June 1991. Construction for the beach centers is estimated at $3.5 million and road and parking improvements at $2.7 million. This work has a Servicewide priority of 36.0.

MORRISTOWN NATIONAL HISTORICAL PARK

It has come to my attention that the property of the late author and conservationist Sterling North, adjacent to the Morristown National Historical Park, has become available to purchase. This would allow the Park Service to extend and expand the existing park area.

14. Question: Please evaluate the historic merits of this property.

Answer: The North's property possesses great potential for preserving archeological resources and for providing historical information on the winter encampment of the Continental Army. A portion of the property contains a large stream (Primrose Brook), a spring (situated on the lower slope immediately below the encampment site), and the eighteenth century "Old Army Road," which was used by the troops. It is most likely that the Connecticut Brigades used the spring and stream as primary water sources for the camp, as it is the closest water available. It is also very likely that the army regularly gained access to the camp over the North's property from the bordering military road. This extensive military activity over the December to June 1779-80 encampment period would be expected to yield an abundance of encampment artifacts on this portion of the property. No known investigations have occurred on the property to confirm the presence of archeological objects.

15. Question: Please evaluate the merits of purchasing the North Property to extend the Morristown Park.

Answer: Ownership of the entire property of 26 acres is not essential for park purposes. However, it would be very beneficial for the park if the northern portion of the property containing the spring and a section of Primrose Brook, approximately 13 acres, was in National Park Service ownership. Such action would ensure preservation of the encampment site surroundings and would yield information regarding the Connecticut Brigades. Federal ownership would also provide protection for the "Patriot's Path," a national recreational trail which passes within 20 feet of the North's property. It is not felt that current zoning limitations would provide these benefits if the property were to be developed.

EDISON NATIONAL HISTORIC SITE

It has been brought to my attention that Glenmont, the home and labs of the late Thomas Edison, is open to visitors only on Sundays. With a growing emphasis on making our children more competitive in science and technology, Thomas Edison's labs and his vast accomplishments should be used to teach and inspire our future generations.

16. Question: Please detail what is necessary for the labs to be operated on a daily (7 days per/and 3 to 4 days per week) basis.

Answer: Glenmont, the home of Thomas Edison, is currently open on weekends only except for July and August when it is opened 5-days-a-week. The historic Edison labs are opened 5-days-a-week year round. In order to open the labs 7-days-a-week, and Glenmont 5-days-a-week in the spring, summer and fall and on weekends in the winter would require an additional $106,700 and 4 FTE's above the amounts shown in the President's fiscal year 1991 budget.

SUBCOMMITTEE RECESS

Senator **Reid**. This subcommittee stands in recess until 2 p.m., Monday, April 23, at which time the testimony will be heard on the request of the Forest Service.

[Whereupon, at 4:43 p.m., Tuesday, April 18, the subcommittee was recessed, to reconvene at 2 p.m., Monday, April 23.]

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1991

MONDAY, APRIL 23, 1990

U.S. Senate,
Subcommittee of the Committee on Appropriations,
Washington, DC.

The subcommittee met at 12:03 p.m., in room S–128, the Capitol, Hon. Robert Byrd (chairman) presiding.

Present: Senators Byrd, Hollings, Reid, McClure, Stevens, Cochran, Domenici, and Hatfield.

DEPARTMENT OF THE INTERIOR

National Park Service

STATEMENT OF JAMES M. RIDENOUR, DIRECTOR

BUDGET REQUEST

Chairman Byrd. The subcommittee will come to order. This is the time scheduled for the Department of the Interior and Related Agencies Subcommittee to hold followup hearings to consider the fiscal year 1991 budget requests for the National Park Service and the U.S. Fish and Wildlife Service. We will consider the request of the Park Service first.

Testifying on behalf of the Park Service is the Director, James Ridenour. Your prepared statement, Mr. Ridenour, has already been included in the record of April 18. So, if you have any supporting witnesses whom you would like to introduce today, please do so, and we will then proceed with the subcommittee's questions.

Mr. Ridenour. I think what we can do, Mr. Chairman, if you approve it, is just proceed with the questions, and then we will call on the appropriate people as necessary.

NEW RIVER GORGE NATIONAL RIVER

Chairman Byrd. Very well. Let's begin our questions with a discussion of the New River Gorge National River. I would like to stress that the development of this park offers great potential for enhancing the economy in the New River Gorge region.

There will be many services that will be provided by the private sector for the park visitors. It is important that the Park Service cooperate with local officials to ensure that the economic development is well coordinated, not only to meet the needs of the park, but equally important to meet the needs and expectations of the business persons in the region.

I think a cooperative approach is good business for the local community, and it also makes good practical sense for the Park Service as well. I am sure that you would agree, Mr. Ridenour, that cooperative neighborly relations are essential to the effective operation of any park, especially one that is being developed in a well-populated area, such as New River.

Would you like to briefly give your thoughts on that economic development issue?

Mr. Ridenour. Well, I would agree that it is to everyone's advantage to work together in the development of a new park area. Obviously, there are things that are important in terms of services to people who will use the park, and that the park will not be in a position to provide.

And in some cases, it is better to provide them outside the park itself, depending upon the physical locations, and things, such as service stations, and overnight accommodations are sometimes better being provided outside the park itself.

I would think that from the beginning it is good for everyone to work together. There are situations that I have seen in the past where if you don't do that, then sometimes people get unrealistic expectations about how quickly a project might become economically viable.

Sometimes a great enthusiasm builds, and then you find the facilities being built, and 5 or 6 years down the road there is a bankruptcy, and then someone takes over, and is successful the second time around.

I think that if expectations are realistically planned for, based on what the Park Service expects in the way of visitation and things of that nature, some real tragic situations can be avoided. So, I would fully agree with the statement that you have made.

Chairman Byrd. I would like to read briefly from a letter sent by Mr. Don Bare to the Park Service, commenting on an economic development study, which the Park Service has recently completed at New River:

> It is my understanding that the purpose of this study was to identify ways in which the National Park Service could assist in producing economic growth outside the boundaries of the park.
>
> This report scarcely mentions such efforts. I am asking that an alliance be forged between the National Park Service and units of local government to accomplish the goal of public participation in the economic development planning for the region.

This is a quotation from Mr. Bare's letter. He is a member—as a matter of fact, he is the head of the county commission there in Raleigh County, which is next door to Fayette.

The Park Service further has the responsibility to protect and preserve our Nation's cultural, historic, and natural resources. It is my understanding that the Park Service feels that Mr. Bare's objections are based on semantical misunderstandings.

However, it is the Park Service staff who have been sent to New River Gorge to propose changes that may affect the local economy greatly. It seems to me that the burden is on that staff to ensure that there is a very open dialog which prevents misunderstandings.

Not all individuals will agree on every issue, but misunderstandings should never be the basis for disagreement. I believe that the Park Service wants to be helpful in developing the New River Gorge regional economy, but that effort should not be hampered by Park Service documents that are vague, and which do not clearly tell local officials what the opportunities are, and what the constraints are for economic development in support of the park.

I note that the operations funding in the fiscal year 1991 budget for New River Gorge continues the congressional add-ons from fiscal year 1990. I am pleased about this, because many of the budget requests from your predecessors automatically deleted all the congressional add-ons. So, you have made a good start.

GRANDVIEW STATE PARK

It is my understanding that the Canyon Rim Visitors Center will be completed and operating next year. Also, it is my understanding that the Park Service will shortly take title to the Grandview State Park, which has approximately 19 employees in the summer season.

This State Park presently receives about 500,000 visitors each year, and its inclusion in the Federal Park would more than double the visitation to the New River Gorge National River.

Given all these increasing demands that the park will experience in fiscal year 1991, why did the Service not propose an increase in the base funding for New River?

Mr. RIDENOUR. I am going to turn to Jim Coleman for that, sir. We talked about that a little bit this morning. Jim, if you would.

Mr. COLEMAN. Mr. Chairman, the arrangements for the transfer of Grandview State Park have not been completed yet with the State of West Virginia, and at this time I am not certain exactly when we will take over. The State originally passed legislation and said that they would give it to us in July 1990.

And I understand that they ran into some kind of a legal problem, and had to go back and look at that legislation, and I am not certain at this time exactly when it will come to us.

Chairman BYRD. I understand that the State law requires that the transfer occur before July 1.

Mr. COLEMAN. That was the first legislation that they passed; that is correct, sir. We are working with them and if indeed that is what holds up, we will work out a cooperative agreement with them, or try to, so that they might operate it until October 1.

And if we have to operate it, we will find some way to get it through the summer probably, with new standards, but we have and will include a request for the operating funds as soon as the first fiscal cycle comes up, which will be in 1992 for us.

Chairman BYRD. How will the Service operate Grandview if additional operating funds are not forthcoming?

Mr. COLEMAN. Well, as I said, we would—we will operate it at a minimum standard until we can get sufficient funds to do that. We will—I guess—I don't know whether it is correct to state that we will reprogram, but we will find some additional moneys from other places to operate at minimum standards.

CANYON RIM VISITOR CENTER

Chairman **Byrd**. What is the construction status of the Canyon Rim Visitor Center?

Mr. **Coleman**. That is underway and should be completed by 1991.

Chairman **Byrd**. That is the opening date?

Mr. **Coleman**. Not precisely, sir. Probably sometime, I believe, in the spring.

Chairman **Byrd**. Of 1991?

Mr. **Coleman**. Yes, sir.

Chairman **Byrd**. Are you confident that the project will be completed within the currently available time?

Mr. **Coleman**. Yes, sir.

Chairman **Byrd**. And if you see a need to reprogram additional funds, will you move swiftly to do that to keep that project on schedule?

Mr. **Sheaffer**. Yes, sir; we can say generally that we will. It depends on the magnitude of problems that may arise.

Chairman **Byrd**. Do you anticipate any problems of great magnitude?

Mr. **Sheaffer**. No, sir; but as Mr. Coleman said, he believes at this time that he can do it within the available funds, but our ability to respond quickly depends on how big the problem is.

Chairman **Byrd**. Well, I am sure that goes without saying, but you don't anticipate any big problems, and if you see a need for reprogramming additional funds you will move swiftly to keep that project on schedule?

Mr. **Sheaffer**. Yes, sir.

THURMOND, WV

Chairman **Byrd**. The Park Service published a development concept plan for the Thurmond area in the past winter. That plan identified three options. The preferred option recommended that the Service interpret the broad period of railroad and coal history in the New River Gorge rather than concentrating on one limited historical period. Would you describe the preferred option briefly for us?

Mr. **Coleman**. The preferred option would be to restore most of the historic buildings in the center of the town, including the Bankers Club. We would acquire and restore the large wooden engine house across the tracks from the Bankers Club.

And we would acquire the railroad depot, which we are now negotiating for, and we would construct a pedestrian tunnel underneath the railroad tracks for safety purposes. Basically, the theme here would be to interpret the area from continuum; that is, from the past and up to the—from its early beginnings to its recent past, rather than focus on one specific period of history.

Chairman **Byrd**. What is the cost of the preferred option in the plan?

Mr. **Coleman**. It is estimated at about $23 million.

Chairman **Byrd**. I believe that the Thurmond DCP proposed renovations of the large old engine repair facility across the railroad tracks from the Bankers Club; isn't that correct?

Mr. COLEMAN. Yes, sir.

Chairman BYRD. With respect to the funding that was provided in the fiscal year 1990 Interior bill for emergency stabilization and for reconstruction and planning, where does the Service stand on completing these tasks?

Mr. COLEMAN. We had $500,000 for restoration—emergency stabilization at Kaymoor, and we have entered into a profit agreement with the State of West Virginia, and they are presently working for that restoration.

The other $400,000 was for work on structures in Thurmond, and they will be divided into two phases; the first is the railroad depot, and when we acquire that, we will begin on some stabilization work.

Some emergency work on the Bankers Club and the other buildings there will be done this summer.

Chairman BYRD. The money was all for Thurmond, and none of it was for Kaymoor.

Mr. COLEMAN. You are right. I guess I was thinking of another $500,000. I'm sorry, $900,000 is being spent for Thurmond planning and stability work. The stabilization work will begin this summer, using local workers with our supervision.

Chairman BYRD. I urge you to move ahead quickly with the reconstruction planning, because every day lost now is a day later that the new facilities will be open to the public.

The Senate report accompanying the fiscal year 1990 Interior bill requested that the Service study the potential for using the old engine repair facility in part of its program to interpret the railroad heritage of Thurmond. Have you completed that study?

Mr. COLEMAN. No, sir; it is underway and will be completed very shortly. I believe that May 14 is the deadline that we have for that.

Chairman BYRD. Is the facility structurally sound?

Mr. COLEMAN. Well, I am not sure. I have not seen the report yet, but I would guess it is, but probably barely. It is not in very good condition.

Chairman BYRD. So, we will——

Mr. COLEMAN. We should know that very shortly.

Chairman BYRD. All right. The engine repair facility is a large structure, and it is a significant feature of Thurmond's railroad history. Its removal would leave a large void in both the physical appearance of Thurmond and in the Service's plans to interpret railroad history there.

Do you have rough cost estimates to fully refurbish the engine repair facility inside and out for public visitation and do you have separate estimates for the cost to stabilize the building and restore only the exterior shell?

Mr. COLEMAN. Yes, sir; but I would emphasize that they are very rough at this time, but it is approximately $3 million to stabilize, and somewhere between $5 to $9 million to restore or reconstruct.

GRANDVIEW STATE PARK

Chairman BYRD. The State of West Virginia, as we heard earlier, is going to transfer title of the Grandview State Park to the National Park Service, and in addition to the operating shortfall, there are a number of maintenance requirements at Grandview.

Has the Park Service reviewed the possibility of constructing a scenic entrance road above Glade Creek as a new approach to Grandview?

Mr. COLEMAN. No, sir; we had not. That is mostly outside the park.

Chairman BYRD. Even though much of the road would lie outside the present park boundary, would you ask your engineers to review the option for potential costs and benefits, and report back to me before mid-June?

Mr. COLEMAN. Yes, sir; if that is possible.

Chairman BYRD. Grandview is the site of theatrical presentations of the mountain heritage of southern West Virginia. If the park facilities were to be expanded to incorporate additional heritage features, such as woodworking or crafting of musical instruments, would it be appropriate to include funds for a development concept plan first?

Mr. COLEMAN. Yes, sir; it would be very appropriate. Quite appropriate.

Chairman BYRD. How much would a DCP cost for Grandview?

Mr. COLEMAN. Probably about $150,000.

NEW RIVER SCENIC PARKWAY

Chairman BYRD. What is the status of the New River Scenic Parkway? When will the State select a route for the parkway and what are the remaining obstacles to construction?

Mr. COLEMAN. Well, the State at the present time is doing or drafting an environmental impact statement, and it is my understanding that that should be finished by July of this year, and once that is completed, a final decision will be made on the exact location, and then they will just need to acquire the necessary lands, depending upon the location that they pick, and begin construction.

Chairman BYRD. Do you have any ranges of the cost estimates for the various options presently under review?

Mr. COLEMAN. No, sir; I don't, offhand.

HARPERS FERRY NATIONAL HISTORICAL PARK

Chairman BYRD. Turning to Harpers Ferry National Historical Park, I am told that construction package No. 115, which includes a number of buildings near the southwest corner of Shenandoah and High Street, will be completed this summer; and all four of these buildings will be reopened to the public late this summer. What exhibits will be contained in these buildings?

Mr. RIDENOUR. If I could turn to Bob Stanton.

Mr. STANTON. Thank you, Mr. Director. Mr. Chairman, the theme and the resulting exhibit will reflect the preservation of historic structures, and it will also depict certain events in our American history, such as black history, and industrial activities in the city of Harpers Ferry at the turn of the 19th century.

It will also depict the ready made clothing that a citizen could buy at that point in history, and also the type of jewelry that was sold in Harpers Ferry at that period of time.

Unfortunately, Mr. Chairman, we did suffer some delays in the construction due to the determination that asbestos was in some of the buildings, and because the complexity of the restoration had not been known earlier. I am pleased to announce, however, that this summer, building 38 which contain preservation activities, and building 40, ready made clothing, will be open and we will be working with Mr. Dave Wright, of the Harpers Ferry Center, to put the exhibits in.

Chairman BYRD. Would you indicate the status of the new visitor transportation system at Harpers Ferry; when will the new buses arrive, and when will the bus storage shelter be completed, and what is the condition of the Cavalier Heights parking lot, and visitor contact station?

Mr. STANTON. Mr. Chairman, I am pleased to state that the buses, six buses, will be delivered in June, and will go into operation the latter part of that month, and that the parking lot and visitors facility will also be completed this summer.

Unfortunately, we do not have funding for the bus storage shelter. However, if funding were provided, we could have it completed by the end of calendar year 1991.

Chairman BYRD. When was the first contract awarded for the parking lot?

Mr. STANTON. It was awarded in August 1988, and we would anticipate completion by July 1990.

Chairman BYRD. That's a pretty long time, isn't it?

Mr. STANTON. Yes, Mr. Chairman.

Chairman BYRD. Why has it taken so long?

Mr. STANTON. For major roads, and parking lots as well as bridges, we normally call upon the Federal Highway Administration to administer those on behalf of the National Park Service.

One of the prime contractors, or the initial contractor, defaulted, and we had to resort to a backup contractor. Therefore, the processing of a new contract was the cause of the delay. Based on a personal inspection, and also by conferring with the Federal Highway Administration, we were assured that the parking lot will be completed in July.

Chairman BYRD. So, this is the Cavalier Heights parking lot?

Mr. STANTON. Yes, sir.

Chairman BYRD. And you think it will be completed in the early part of June?

Mr. STANTON. No, sir; it will be completed in July. The buses will be delivered in June, and we will initiate the visitor transportation program at that period of time.

HARPERS FERRY BRIDGE

Chairman BYRD. One matter of serious concern to me is the safety condition of the Route 340 bridge over the Shenandoah River in the Park. This is a State-maintained bridge.

I met in January of this year with Park Superintendent Don Campbell, and acting West Virginia Highway Commissioner Fred Van Kirk, and I requested that the engineers from the National Park Service review the condition of the bridge with engineers from the State Highway Department, and the Federal Highway Administration. What can you report today on that joint review?

Mr. **Stanton**. Mr. Chairman, in a followup to your meeting with Park Superintendent Campbell and a representative of the West Virginia Highway Department, I immediately got in touch with our local representative, a representative of the Federal Highway Administration, and also conferred with Superintendent Campbell, and professionals from my own staff.

We, in turn, had a delegation from our office travel to Charleston, WV, on March 8 and met with Federal Highway Administration, and representatives of the West Virginia Highway Department, and a course of action was decided upon in that meeting, and the joint review is to continue.

Chairman **Byrd**. What course of action was decided at that time?

Mr. **Stanton**. It was decided that the West Virginia Highway Department would take the lead in exploring alternatives for the improvement of the bridge. We are advised that that should be completed within another 3 to 6 months.

The alternative as we understand it, first of all, is to redeck the existing bridge, or to consider a replacement bridge, which will in essence be a second bridge, with the possibility of retaining or demolishing the existing bridge.

Chairman **Byrd**. If the bridge is in seriously deteriorating condition, it could represent a serious threat to hundreds of thousands of park visitors, and several million trips by West Virginians each year.

And reductions in the load carrying capacity of the bridge could also have a crippling effect on heavy industrial traffic and consequently, the economy, of the eastern panhandle.

I would hope that the Service will do everything within its ability to cooperate with State officials in an expeditious review of the reconstruction or replacement options for the Route 340 bridge.

Since the bridge passes through a national park, would an environmental impact statement be necessary before the bridge could be replaced if that option were chosen?

Mr. **Stanton**. If the bridge were to be replaced by constructing a new bridge on a different site located on the Shenandoah River, which would call for realignment as you enter West Virginia, and as you leave West Virginia, then it is our understanding that based on an onsite review by the Federal Highway Administration and West Virginia Highway officials, that it would require an environmental impact statement.

If, however, the alternative of redecking were to be chosen, then an environmental impact statement would not be required.

Chairman **Byrd**. How much time might a study take to complete?

Mr. **Stanton**. Based on our experiences with replacement or major realignment of bridges, probably in the neighborhood of 18 months, Mr. Chairman.

Chairman **Byrd**. Who would be responsible for preparing the environmental study?

Mr. **Stanton**. It would be a joint responsibility between the West Virginia Highway Department and the Federal Highway Administration, and, with this kind of a program, the Federal Government would perhaps pick up 80 percent of the cost, and the State of West Virginia would pick up 20 percent.

In view of the fact that it may have an impact on a nationally registered property, the Harpers Ferry National Historical Park, the Federal Highway Administration would be responsible for directing that the EIS and other environmental compliances be adhered to.

Chairman BYRD. How do you think it is going to come out? Do you think it is going to be a realignment, or——

Mr. STANTON. Well, again, I would hate to be too presumptuous, Mr. Chairman, but I think basically they are looking at the alternative to redeck, and that would imply for us that the principal structures are sound, and they are just going to put a deck on it. Those are the kinds of analyses that they are making now.

But there is some speculation that they may need a total new bridge, which would cause little realignment up through the valley, but again that formal determination has not been announced to the National Park Service.

Chairman BYRD. Well, should an EIS be required, and in the event that approach were taken, what can the Service do now to initiate the collection of information in advance to expedite an EIS?

Mr. STANTON. We have taken the position, Mr. Chairman, that in case the West Virginia officials proceed with the alternative of replacing, we have already requested our nearest service center, which has a number of engineers and other various types of disciplines, or specialties, to assist us and the Federal Highway Administration in preparing an environmental impact statement.

Chairman BYRD. Would your cooperative efforts require additional funding above what is included in the fiscal year 1991 budget request?

Mr. STANTON. Yes, Mr. Chairman, it would. Because of the proximity of the bridge, and any prospect of realignment in relation to the Harpers Ferry National Historical Park, we are very much concerned about the visual impact, in terms of the historical integrity of the park.

So, visual analysis would be needed, and we would estimate that that would cost approximately $100,000. We are also concerned that because the area is subject to flooding in Harpers Ferry, any realigned structure on the Shenandoah River would need a full analysis, in terms of whether or not the realignment would impact the riverflow.

We would estimate, Mr. Chairman, that probably another $50,000 for an indepth hydraulic study would be needed concerning how any structure would impede the normal waterflow.

Chairman BYRD. Do you need this to precede the statement on the option that would be chosen?

Mr. STANTON. If the replacement option is chosen, we need that decision's data to feed into the EIS process, so all mitigating actions such as sound walls could be considered after the State and Federal Highway Administration make their decision.

Chairman BYRD. If the redecking approach is decided upon, do we need this additional funding?

Mr. **Stanton**. It is our understanding that this kind of study would not be required then, Mr. Chairman.

HARPERS FERRY CONSERVATION LABORATORY

Chairman **Byrd**. I understand that the Service has been operating its Harpers Ferry Conservation Laboratory in very substandard, perhaps even dangerous, conditions; is that correct?

Mr. **Ridenour**. If I might speak to that for just a moment since I have visited it. I would certainly say that it is in substandard condition, and a group of people that are working there and who are fine craftsmen indicated they are not working in the best of conditions. If I might turn to Dave Wright for any comments he might have.

Mr. **Wright**. That is correct, Mr. Chairman. The building is in substandard condition and continues to deteriorate; and it was just discovered last week that there was a termite swarm coming up through one of the cracks in one of the floors, and that tends to have serious implications for artifacts that might be there, such as Abraham Lincoln's couch or Thomas Edison's chair.

Chairman **Byrd**. Well, what is the type of work done at the facility?

Mr. **Wright**. It is conservation of artifacts that are either on display, or going to be put on display in museums and exhibits in the National Park System throughout the whole United States. Approximately 300 artifacts are either on display, or getting ready to go on display.

Chairman **Byrd**. How many people do you have working there?

Mr. **Wright**. In the conservation laboratory?

Chairman **Byrd**. Yes.

Mr. **Wright**. About 35.

Chairman **Byrd**. What are the options for replacing the present Shipley School facility, and how much could be used to initiate this process in fiscal year 1991?

Mr. **Wright**. We have been looking at the possibility of acquiring the school, with the option of either building a new facility on that property, or reconditioning the school.

The word that we have now is that the school board is not inclined to sell that property to the National Park Service, and we have to get out of there by November. We have initiated the action to get the General Services Administration to lease an additional 30,000 square feet of space someplace in Jefferson County for us.

Chairman **Byrd**. What is the total construction estimate for the new conservation laboratory, and what is the class of that estimate?

Mr. **Wright**. Well, if we were to build on the Shipley School property, the total estimate is about $11 million, and that is based on what I would call a class C estimate, based on preliminary designs that have been done.

Chairman **Byrd**. Do you consider the replacement of the Shipley School to be a high priority for the Service?

Mr. **Wright**. I certainly do.

Chairman **Byrd**. Why?

Mr. WRIGHT. Because of the nature of the work that we are doing there. These are irreplaceable artifacts that the Park Service has the responsibility for maintaining in perpetuity, and we work with things like—like I said before, Abraham Lincoln's couch, which is in the school right now, and things like the flag that flew over Fort Sumter, things that there are only one of, and once they are lost, they are gone forever.

WILLIAMSPORT PRESERVATION TRAINING CENTER RELOCATION

Chairman BYRD. The conference report accompanying the fiscal year 1990 Interior appropriations bill requested the Service to study possible options for relocating that facility, which is now situated in a flood plain adjacent to the C&O Canal. What are the findings of that study?

Mr. WRIGHT. If I could respond to that, sir. We have completed the study, and it is in the Department for review right now, but the findings are that over the long term, we should get out of that facility at the C&O Canal.

We looked at a series of sites that could be considered as possible replacement sites. The criteria that we were looking at were: could we be in a Park Service building; we need to be close to a source of supply of the kinds of materials that we use; we also need to be close to a good labor market; and close to transportation facilities; and also close to a majority of the appropriate facilities for Park Service trainees in that particular program.

Chairman BYRD. Do you have any location in mind?

Mr. RIDENOUR. There are several locations that we looked at, and one of them that comes to mind right now is a facility at Monocacy Battlefield, which has about 10,000 square feet, and would make an ideal administrative unit, but where in addition to that, we would have to build a maintenance facility. We have also looked at an area over at Cuyahoga Valley, and we have looked at other areas in western Pennsylvania, and at the Presidio.

And we have also looked at the Job Corps Center in Jefferson County, but the Job Corps Center right now is encumbered by deep restrictions from the State of West Virginia and Jefferson County to use that land for recreational purposes.

Chairman BYRD. It is my understanding that Williamsport presently receives its administrative direction from the Interpretive Design Center; is that correct?

Mr. WRIGHT. Yes, sir.

Chairman BYRD. Given that fact, and the nature of the work being done by the Interpretive Design Center and the conservation lab, would your preference be to relocate the Williamsport Training Center to the Harpers Ferry area?

Mr. RIDENOUR. Well, we have looked at potential locations at Harpers Ferry, but there simply is none in the immediate area of Harpers Ferry. It does make sense to have it close by the Harpers Ferry Center for administrative purposes.

Chairman BYRD. The Fish and Wildlife Service is planning to construct a large training center in the Harpers Ferry area. Are you familiar with this proposed training center?

Mr. RIDENOUR. I have heard about it, sir.

Chairman BYRD. The wildlife and natural resources training activities at this new center are not intended to duplicate the programs offered at the Park Service's own Mather Training Center in Harpers Ferry.

How, and where, does the Park Service accomplish its natural resource training presently?

Mr. RIDENOUR. Well, we have conducted training at a number of different facilities, one of which is located currently at Harpers Ferry, and we have, of course, our training activities out at Grand Canyon as well.

We are looking at the possibility of what the Presidio might have in the way of possible training sites, because the military have a number of training buildings there that have some of the audiovisual activities and other things that would obviously be adaptable to the kinds of training activities that we might do, especially the things that we do at the Grand Canyon.

Chairman BYRD. Would the proposed Fish and Wildlife Training Center be of use to your organization for some of this training?

Mr. RIDENOUR. I think it would certainly have possibilities, and we and that organization have many activities in common, in terms of vegetation studies and things related to endangered species and habitat.

So, I would think that, yes, there would be obvious advantages to us sharing training activities, Mr. Chairman.

Chairman BYRD. Have you evaluated the specific volume of training that the Park Service might accomplish at this new center when it opens in 1994?

Mr. RIDENOUR. No, sir; we have not.

WHEELING, WV STUDY

Chairman BYRD. Turning to your park study of the Wheeling area, I wish to note that this is of great interest to me. What is the status of the study which was initiated jointly with a commission of local representatives this past January?

Mr. RIDENOUR. A draft of the study will be available early this summer, and the report should be finalized by September.

Chairman BYRD. Can you tell us about the initial findings of the study?

Mr. RIDENOUR. We have not gotten that far along at this point, unless Jim has anything to add to that.

Mr. COLEMAN. No, sir; we are in the midst of identifying the resources, and trying to describe the significance of the resources. I think, though, we have centered on two major themes, industry and transportation, but I don't know much more about it than that.

Chairman BYRD. I want to give you every encouragement for your efforts at Wheeling. With its location at the point where the old National Road crosses the Ohio River, Wheeling was an important stop for westward settlers to acquire provisions and for riverborne commerce in Independence Hall.

Wheeling was the first capital of West Virginia in 1863, and the Victorian era is well represented in many fine old houses in the town. There is certainly a story to be told in Wheeling.

Given these resources, the enthusiastic support of the local and State officials, and the fact the nearby Oglebay Municipal Park, one of the finest in the country, is already attracting 3.6 million visitors per year, more visitors than Yosemite or Yellowstone I might add, and I believe that Wheeling has all the right ingredients to become a very important, and useful, and successful addition to the National Park System.

All right. This completes the subcommittee's questions for today, Mr. Ridenour. Thank you for your testimony and that of your associates.

U.S FISH AND WILDLIFE SERVICE

STATEMENT OF JOHN F. TURNER, DIRECTOR

ACCOMPANIED BY:

BRUCE BLANCHARD, DEPUTY DIRECTOR
KATHY TYNAN, BUDGET OFFICER
RONALD E. LAMBERTSON, REGIONAL DIRECTOR, BOSTON, MA
ANTHONY L. ITTEILAG, DIRECTOR OF BUDGET, DEPARTMENT OF THE INTERIOR

BUDGET REQUEST

Chairman BYRD. The Fish and Wildlife Service will now take its turn. Thank you very much. Testifying on behalf of the Fish and Wildlife Service today, will be the Director, John F. Turner.

Your prior statement has already been included in the record, Mr. Turner, of March 27. If you wish to introduce any supporting witnesses who are with you today and make any additional statements, you may do so. Otherwise, we will proceed with questions.

Mr. TURNER. Mr. Chairman, let me just say that my staff and I are pleased to be here today in this followup hearing. I have brought people with me today that I hope can respond to your questions adequately, including the Secretary's Budget Officer, and our Regional Director as well.

NATIONAL TRAINING CENTER

Chairman BYRD. I would like to initiate the subcommittee's questions with a review of the status of your plans to construct a National Training Center near Harpers Ferry, WV. Congress appropriated $4.9 million in fiscal year 1990 for site acquisition and preliminary design and engineering.

Prior to that time, at my request, the Service reprogrammed $99,000 in July 1989 to initiate a scoping study, and to begin site evaluation for the center.

So, the efforts behind the training center are actually some 8 months already in progress. What progress has the Fish and Wildlife Service made to date? Has a site been acquired? Have design contracts been awarded; have personnel been permanently assigned to oversee the development of the training center and the programs that will be taught there?

Mr. TURNER. Mr. Chairman, with your indulgence, I can give you a quick summary of where we are with the training center, and how we view it.

Chairman BYRD. All right.

Mr. TURNER. And then maybe you will have some followup questions.

Chairman BYRD. Very well.

Mr. TURNER. I have brought some displays for you. Let me just say, as the new Director, I find the training center to be one of the most exciting things going on in the Fish and Wildlife Service.

As you know, sir, we are a biological agency dedicated to the enhancement and preservation of wildlife and fisheries and their habitat, and we are probably behind in the training aspect. Our most important assets are our people, and the investment that we make to keep them current in technology and biology, is important, and we are not doing that.

As you have very wisely envisioned, we are looking at three components; one is the training of our people, other Federal agencies, and the State groups.

Second, is environmental training, whereby we can work with every group from school kids to teachers to develop an awareness of wildlife and fisheries, and also the environment. I think that the third component would be a visitor facility. We will talk about those in a minute, but I am excited about all three of those components.

Of course, the purposes are for a the state-of-the-art training facility, for our agency and others in the Federal Government and outside groups, and a world-class visitor education and interpretation facility.

We will get into these aspects in a little more detail. The preliminary scoping included looking at a number of sites. We conducted the preliminary analysis in January 1990, and have narrowed those down to a few sites. We are actually out on the ground now doing some contaminant assessments and so forth.

The definition of one of the project components, one of the most important ones, is underway. It has many phases to it, and the first was an inservice look that was completed in January. We asked our own people—in other words, contaminants fisheries, and refuges staff, what was needed in the way of training.

We have gone to every Federal agency that we could think of, and State agencies, and asked what their needs are. We have hired a consultant to help us scope out the conceptual parameters of this project, and I will go into this in a little more detail.

NATIONAL TRAINING CENTER PLANNING

For the actual planning of the project, we have a consultant who is helping refine the concept. We went through and advertised in January for architectural engineers, and we had 35 submit applications. We narrowed that down to perhaps a dozen, we interviewed six recently, and will soon select a top priority firm to help us with the design.

Of course, when we get through with the planning process, we will be back to brief your committee and show you where we are, and then we will seek your endorsement for actual construction.

We have had good responses from some of the other Federal agencies that have biological needs for training. They are now filling out a very extensive questionnaire for us, to tell us what they need in the way of classroom space and cooperative efforts.

The States have expressed an interest in this facility, where they can send their wildlife and fisheries people to be trained along with ours. There are several nongovernmental organizations, and several conservation-type groups that have also expressed an interest.

The types of training offered will be pretty much biologically driven. Of course, there are a lot of pieces to that, not only for new people that we hire, but for other groups that have an ongoing role and for upgrading the training of people that we have working for us.

You don't want to hire a fishery individual who finished his schooling 20 years ago, and has not been getting continuously upgraded. Facility considerations will include classrooms, and laboratories, and audiovisual support for the training component. We are also looking at educational outreach, computer support, a possible firing range for the law enforcement people, dormitories, and physical fitness areas.

We have decided initially that some housing at the facility would be appropriate in order to keep the trainers and trainees together in a close situation. Our educational programs will not only educate our own people, but will house the Fish and Wildlife Service educational outreach components. Whether we will be working on a training program on the San Francisco Bay, or a brochure to reach farmers and ranchers on farm bill programs, this, like the center for the National Park Service at Harpers Ferry, will be our center to produce the educational component for the entire Service.

We will have visitor and educational operations going on at the center, where school kids and teachers can come in addition to the drive-in public. This center will also house the development of materials for our educational outreach program throughout the United States.

The visitor education facility must consider concepts, themes, possible modules, and finally exhibits. We prepared these two facility concepts, Mr. Chairman, not to say that this is what the center is going to look like, but to give us a feeling for size and composition including parking, housing, a training center with classrooms. This shows the modules we might use for visitor attraction. The only difference between the two is that with this one we would have our training center, and our public education kind of close together.

NATIONAL TRAINING CENTER SITE SELECTION

I personally think that this is going to be better, where you have your training separate from your public education.

This gave us a feel for how much room we are going to need. This is in no way an actual design. There are questions, specifically, on site acquisition. We want to have it very close to Harpers Ferry, not only because of the amenities there, but it would be close to the river and close to where the public is now traveling. And, also, so that we could coordinate with other agencies, like the National Park Service. As I mentioned, we looked at a number of sites, and as some of those dropped from consideration, we would pick up a contingency site. Some of those were a little further out than we would like them to be, but we tried to consider many alternatives.

We hope to be done with our site assessment and followup survey for hazardous wastes in May.

Mr. **Blanchard**. Preliminary information will be available in June.

Mr. **Turner**. This is my Deputy, Bruce Blanchard, speaking. These are some of the contingencies, and some of the preacquisition steps that are required by law, such as an environmental assessment, a contaminants survey, work with the State and county to determine title, and, of course, the appraisals.

That will take place on the priority piece of property, and I hope negotiations will start very quickly. We hope to go to closing and completion of acquisition no later than late fall, and certainly no later than the end of the calendar year.

The size of the property that we are looking for, Mr. Chairman, is a minimum of 300 acres, and I think closer to 500 acres would be advisable.

This chart shows a tentative schedule. This point would be the end of the planning stage next year when it would be necessary for us to come back to your subcommittee to do a separate review for construction authorization. We are trying definitely to complete all construction by September 1994, and have an opening ceremony in October 1994.

This would have to be a fast track construction process, which we believe that we can do. One way to do that would be to go ahead and issue a site preparation contract early. This would keep it to an 18- to 24-month construction cycle, and actually have the building ready.

OFFICE OF TRAINING AND EDUCATION

With that, let me just summarize the steps that we have taken to date. We have prepared a proposal to open or establish an Office of Training and Education, and put that under Deputy Blanchard. We have three positions now that we have been working for several weeks on, and eventually we will have eight positions in that office.

There will be eight full-time people and we will have five more staff that are assigned to our contracting and engineering staff working on this project. Eventually, more staff that are involved in training now, and relate to the Service's training components will be transferred. That is how we envision the staffing.

I believe the request for reprogramming approval on these eight positions has been submitted to your staff. So, with that, Mr. Chairman, we would be happy to respond to any other specific questions that you may have.

Chairman **Byrd**. Thank you. Do you care to add anything?

Mr. **Blanchard**. No, sir; I think the Director has covered the bases on where we are.

Chairman **Byrd**. You have done very well; and I appreciate the enthusiasm that you have indicated for this project and I share that great enthusiasm, and I hope that we can do everything that we possibly can to meet that construction date of September 1994. So, you have got your land in mind, have you?

Mr. **Turner**. Well, we have narrowed it down to three preferable sites, and I believe that the staff has one that looks the best at this time. Now we need to finalize that, and then have that piece appraised, and see what the price on it is.

The only additional comments, Mr. Chairman, that I might make is that one of the most exciting components of this project would be the public attraction.

Chairman **Byrd**. One of the exciting what?

NATIONAL TRAINING CENTER ENVIRONMENTAL EXHIBITS

Mr. **Turner**. One of the most exciting components will be the environmental attraction available to the public. I have appreciated working with your staff. They seem to indicate a need to look for a theme that fits best fish and wildlife; whether it may be an aquarium, or something else.

My own personal inclination at this time is that we could do something extremely exciting along the current theme of the Fish and Wildlife Service. This would be exhibits on the wetlands, endangered species, and some of the current ecological themes, and problems that we now face nationally.

Using those types of themes with dynamic modules, we can not only make it exciting for a family from California to drive in and look at, but also for ongoing training for school kids, and even training of our own people.

The contractor, and our own people have some wonderful ideas, and I think when we come back to you we are going to have some concepts that will be exciting for your constituents, the Service, and potential visitors.

Chairman **Byrd**. Well, to refer to it as an aquarium would greatly underestimate the objectives and to contribute to a misunderstanding of the purposes, which are quite a lot bigger and greater in magnitude—in thought and in action.

Mr. **Turner**. Well, we appreciate the flexibility of the committee, and yourself. I think we are going to come up with something exciting.

Chairman **Byrd**. I gather that this is one of your highest priorities?

Mr. **Turner**. Yes, Mr. Chairman, it is.

Chairman **Byrd**. Assuming that $2.9 million of the fiscal year 1990 appropriations will be used for project planning, design and coordination, will the remaining $2 million be adequate for land acquisition?

Mr. **Turner**. Mr. Chairman, having not identified the site or having a completed appraisal, it is difficult to answer that. I think we will be in a better position to give you and your staff a better figure in the next few weeks.

It is my understanding that land in the Harpers Ferry area is selling anywhere from $5 to $30,000 an acre, depending on the site, how large the parcel is, et cetera.

If we are looking at a 3- to 500-acre site, and a $10 to $20,000 range, then obviously the site is going to cost in excess of the $2 million we now have available.

With regard to what that figure might be, and when it would be needed, we will have to come back to you when the appraisal is done.

Mr. **Blanchard**. On the appraisal process, we will have definitive estimates in about 2 months.

NATIONAL TRAINING CENTER LAND ACQUISITION

Mr. **Turner**. It would seem that in addition to the $2 million appropriated, the Service will be looking at between $3 and $7 million.

Chairman **Byrd**. Well, of course, the longer we wait, the more that figure will grow in all likelihood.

Mr. **Turner**. Hopefully, we are in a position where we can select the piece, get appraisals, and begin negotiations in the next few weeks. It is my understanding that an additional 15 percent is estimated for preacquisition costs.

It would be $3 to $7 million, in addition to the current $2 million. I think that would cover the 15 percent, but we will get better figures.

Chairman **Byrd**. All right. Let's hope that we can proceed expeditiously. What has been done to date, and what more are you planning to do in the way of coordinating your training center opportunities with the natural resources training needs of other Federal, State, and private organizations; and I believe you testified on that already.

Mr. **Turner**. Mr. Chairman, I wrote personal letters to—it seemed like 25 or 30 letters—Federal agencies I attended an initial scoping meeting with agency representatives, and I think 12 or 13 came.

We have had a lot of interest shown on our questionnaire. We have had a high amount of interest especially from the National Marine Fisheries Service, and they were extremely excited about being a partner.

Others have expressed interest and they will get back to us on the questionnaire. When we look at classroom size, teaching, course theme, and so forth, we will have that information. The International Association of Fish and Wildlife Agencies will respond to us, and we will specifically question environmental groups.

There is so much interest out there that we may be looking at items from everybody's initial wish list. I think it will be a wonderful partnership, whereby Forest Service biologists, Marine Fisheries scientists, and BLM biologists exchange their know-how and expertise with Fish and Wildlife Service personnel. It could be a wonderful opportunity for cross-fertilization with those types of agencies, mandated with biological responsibilities.

Chairman **Byrd**. The $7 million, as I understand it, would be for land acquisition and part of the design costs?

Mr. **Blanchard**. I believe the figures that were mentioned would be solely for acquisition, and then we would come back to you with architectural and design estimates that would be for the construction package.

Chairman **Byrd**. Will the $7 million be adequate in the coming fiscal year to keep the training center on schedule to open in 1994?

Mr. **Turner**. I am going to ask Deputy Blanchard to respond to that. He keeps track of all the figures.

Chairman **Byrd**. Do you need design money on top of that?

NATIONAL TRAINING CENTER DESIGN

Mr. **Blanchard**. Yes, sir; the design normally is figured as an approximate percentage of construction, and since we don't know what construction costs will be until we get through the planning process, all we can do is make estimates at this point.

We assume an estimate in the design costs of $9 or $10 million, and then back off from the $3 million that has already been appropriated. We are talking about an additional $7 million. Maybe $4 or $5 million would be appropriate for the coming year.

In the design area, it is a multiyear cost. It is not like land acquisition, for which you have to have the total funding available up front.

Chairman **Byrd**. And at that level, what would you expect to accomplish in fiscal year 1991?

Mr. **Blanchard**. By the end of fiscal year 1991, we would have finished the detailed planning process, to the 35-percent level under Federal architect engineering performance requirements. They can give us the detailed plan, prior to leading to engineering specifications and construction, and put us in a position to come back with a firm cost estimate before the committee.

Chairman **Byrd**. Well, I certainly will do all I can to ensure that the Service gets the necessary funding to complete construction and to begin operation of the training center.

And I hope that as funds are appropriated you will use them promptly, and effectively to ensure the development of the best possible training center before the middle of the decade. So, I hope we won't see any missed opportunities. This center can be a great resource for the Service. It should be accorded the management attention that it deserves, and I hope that there will be no foot dragging anywhere.

Let's turn now to the recently submitted reprogramming for the training center and the establishment of an office of training and education. To whom will this office report?

TRAINING REPROGRAMMING

Mr. **Turner**. Mr. Chairman, the office will be placed immediately under Deputy Director Blanchard's control, and will report to him.

Chairman **Byrd**. Will it have direct access to you?

Mr. **Turner**. Yes, Mr. Chairman. I felt that this placement gave this office access. In fact, Deputy Blanchard and I have been discussing this almost on a weekly basis, and I try to attend many of the meetings with him and the staff as we get underway I think we will have good profile on this, and good attention by my office.

Chairman **Byrd**. I believe that matter is important, given the new emphasis that is being placed on training and the total dollars that Congress is preparing to spend on the training center.

How do the costs and organization alignment of this new office compare with the costs and organization of the Service's previous training management activities?

Mr. **Turner**. Mr. Chairman, initially, I think the effort is going to be more costly. That is because the Service has not given adequate attention, not only to education, but also training of its own personnel.

In the long run, this effort is going to be a more effective and efficient program, being able to train our people in one location rather than around the country.

We are behind other agencies when you look at the number of people in training. Take for example the National Park Service, and BLM. We are behind those agencies.

Chairman BYRD. Were training management costs built into the regional allocations in the fiscal year 1990 budget request?

Mr. TURNER. Would you repeat that question, Mr. Chairman?

Chairman BYRD. Were training management costs built into the regional allocations in the fiscal year 1990 budget request?

Mr. BLANCHARD. No, sir.

Mr. TURNER. I believe that Ms. Tynan can answer that more fully.

Ms. TYNAN. Mr. Turner, I can help you out there. I am Kathy Tynan, Budget Officer for the Fish and Wildlife Service. Training costs are a component of the allocations for each of the programs. The amount that we are looking at to establish the office of training is really a very small amount of money, and it will have no adverse impact on ongoing programs.

We will be able, in the long run, to provide a very cost effective centralized training program, given that you agree on the reprogramming and the facility itself.

Chairman BYRD. Is it fair to say then that the reprogramming proposal requests a consolidation of some of the training management moneys that were allocated to the regional offices?

Ms. TYNAN. It will consolidate some funding initially, because this reprogramming only represents initial start-up funding. We are pulling together four of the eight people from the training areas in the field, and eventually this Office will pull together the whole training concept for the Service.

Chairman BYRD. And the reprogramming in your opinion will not have an adverse effect on the Service's programming?

Ms. TYNAN. Oh, no, sir; not at all.

OHIO RIVER ISLANDS

Chairman BYRD. All right. Now, let's turn to the Ohio River Islands. The Congress appropriated $850,000 to the acquisition of 13 of these islands in the fiscal year 1990 bill. Are you managing these islands as a refuge now?

Mr. TURNER. Mr. Chairman, I am going to ask our Regional Director, Ron Lambertson, to respond to that.

Mr. LAMBERTSON. Mr. Chairman, we are in the final stages of the acquisition process for those islands. We have been onsite, have done our surveys, we have done our appraisals, and we have done the environmental assessment work. We expect to close and take possession shortly after June 1.

Currently they are not being managed correctly, but they will be shortly.

Chairman BYRD. So, you expect to take title when?

Mr. LAMBERTSON. Approximately June 1.

Chairman **Byrd**. It is my understanding that the Service's management of these islands will in no way impede commercial river navigation; is that correct?

Mr. **Lambertson**. That is correct, Mr. Chairman. I have sent a letter to the Divisional Chief of the Corps of Engineers in Cincinnati last week, explaining in detail how we would manage these islands, and how their navigational operations should not in any way be impacted by that.

Chairman **Byrd**. I will include in the record, without objection, your recent letter to me on this point.

[The letter follows:]

U.S. Department of the Interior,
Fish and Wildlife Service,
Washington, DC, March 23, 1990.

Hon. Robert C. Byrd,
Chairman, Subcommittee on Interior and Related Agencies, Committee on Appropriations, U.S. Senate, Washington, DC.

Dear Mr. Chairman: I have become aware of concerns regarding navigation and establishment of the Ohio River Islands National Wildlife Refuge. I wish to provide you with the Fish and Wildlife Service's (Service) position regarding commercial navigation on the Ohio River in the vicinity of the proposed refuge.

Navigation related activities on the Ohio river will not be affected in any way by the establishment of the proposed refuge. This is because refuge management activities and responsibilities extend only to those lands acquired by the Service. Other Service responsibilities, such as enforcement of migratory bird laws, protection and management of federally-listed threatened and endangered wildlife, and review of permits under the Clean Water Act, will continue regardless of refuge establishment. Navigation will continue to be regulated by the Corps of Engineers and the Coast Guard under existing authorities.

The Service's acquisition of the proposed refuge will not affect future regulatory permit actions on the refuge or adjacent private lands. Service comments on applications for Corps of Engineers permits will be objective, unbiased, and based on the affected ecological values. The Service will give the same consideration to activities along the Ohio River when commenting on permit applications that it would to other areas with comparable values.

The Northeast Regional Director has prepared an environmental assessment of the affects of establishing the proposed refuge. At this time, there is no indication that an environmental impact statement would be required. On the contrary, the refuge would contribute to the long-term protection of the Ohio River's natural resources.

We expect to acquire the first tracts this fiscal year with the $850,000 that was appropriated. Refuge acquisition will proceed as purchase agreements are negotiated with willing sellers.

Again, thank you for the chance to outline the Service's position on the proposed Ohio River Islands National Wildlife Refuge. Please contact me if I can be of any additional assistance.

Sincerely,

John F. Turner, *Director.*

OHIO RIVER ISLANDS FISCAL YEAR 1991 FUNDING

Chairman **Byrd**. Does the acquisition of additional islands on the Ohio River continue to be a high priority for the Service?

Mr. **Lambertson**. Yes, Mr. Chairman, it is currently in the budget, with a request of $1.25 million for acquisition in 1991.

Chairman **Byrd**. What islands are your highest priority for acquisition, and how would this addition to the refuge benefit the citizens of West Virginia and other adjacent States?

Mr. **Lambertson**. Mr. Chairman, there are 38 islands altogether, and our priority is to acquire all 38. We will negotiate with the willing sellers, first.

It isn't a matter of picking out a certain set of islands and going after those. The first thing we look for is the willing sellers, so that we don't create any unhappiness with our acquisitions. They are all high priority and we intend to obtain all 38 eventually.

We will go to those that we have identified as having the most important resource values that also have willing sellers.

Chairman Byrd. And how would this addition to the refuge benefit West Virginia and other States?

Mr. Lambertson. We think that this will be very beneficial to both West Virginia and Ohio. We found that a new National Wildlife Refuge in an area attracts a sizable number of visitors, such as people who like to go bird watching. I think that 20 years from now these islands will be even more important, because they will remain unique ecosystems that have been totally undisturbed by man.

And 20 years from now there will be very little undisturbed habitat left anywhere.

Mr. Turner. Mr. Chairman, if I might also add that the islands will be important to our listed species, and I believe we have 15 of those in the area.

Chairman Byrd. Fifteen of the——

Mr. Turner. Fifteen of the species that we have listed.

Chairman Byrd. Would you indicate some of them for the record?

Mr. Turner. Mr. Chairman, that is 17 species; 10 species of birds, and 7 species of fish.

Mr. Lambertson. For sure the bald eagle.

Chairman Byrd. What about the bald eagle?

Mr. Lambertson. I say the bald eagle would be one of them.

Mr. Turner. Yes; that is correct. I don't have the specific list, but if you would like, I can provide that for the record.

Chairman Byrd. All right, if you wish.

[The information follows:]

OHIO RIVER ISLANDS NWR—LISTED SPECIES

A number of species on and around the Ohio Riber are considered by bordering States to be rare, endangered, or of special interest. These include 17 species of plants, 10 species of birds, 7 species of fish, and 5 species of freshwater molluscs.

RARE PLANTS, BIRDS, FISH, AND FRESHWATER MOLLUSCS

The following plants known to occur on the islands are listed by the West Virginia Heritage Trust data base as very rare or rare:

Plants

Matteuccia pensylvanica	Ostrich fern.
Sparganium androcladum	Staminate burreed.
Saggittaria rigida	Stiff arrowhead.
Do	Sedge.
Cyperus refractus	Do.
Juncus filiformis	Rush.
Silene nivea	Snowy campion.
Euphorbia vermiculata	Hairy spurge.
Ammania coccinea	Long-leaved ammania.
Rotala ramosior	Toothcup.
Jussiaea leptocarpa	Primrose willow.
Cornus rugosa	Round-leaved dogwood.

Plants—Continued

Uniola latifolia	Wild oats.
Lilium superbum	Turk's-cap lily.
Polygonum cilinode	Mountain bindweed.
Arabis lyrata	Lyre-leaf rock-cress.
Myriophyllum heterophyllum	Two-leaved water milfoil.

Of the birds observed on the islands, the following are listed by one or more of the States as endangered, threatened, rare, or species of special interest:

Birds

Phalacrocorax auritus—Kentucky	Double-crested cormorant.
Ardea herodias—Kentucky	Great blue heron.
Casmerodius albus—Kentucky	Great egret.
Nycticorax nycticorax—Kentucky	Black-crowned night heron.
Accipiter striatus—Ohio and Kentucky	Sharp-shinned hawk.
Accipiter cooperii—Kentucky	Coopers hawk.
Buteo lineatus—Kentucky	Red-shouldered hawk.
Pandion haliaetus—West Virginia and Kentucky	Osprey.
Falco peregrinus—West Virginia and Kentucky	Peregrine falcon.
Falco columbaris—West Virginia	Merlin.

The States of Ohio and West Virginia recognize the following fishes as endangered (Ohio) and as fishes of concern (West Virginia):

Fish

Hiodon alosoides—Ohio	Goldeye.
Hiodon tergisus—West Virginia and Ohio	Mooneye.
Hybopsis storeriana—Ohio	Silver chub.
Ictiobus niger—West Virginia	Black buffalo.
Ictiobus bubalus—West Virginia	Smallmouth buffalo.
Moxostoma carinatum—Ohio	River redhorse.
Moxostoma duquensnei—West Virginia	Black redhorse.

Ohio recognizes as rare and endangered the following mussels collected in the study area:

Freshwater molluscs

Quadrula nodulata	Warty-back.
Quadrula metanevra	Monkeyface.
Pleurohema cordatum	Ohio pig-toe.
Plagiola lineolata	Butterfly.
Potamilus ohiensis	Ohio heelsplitter.
Lampsilis abrupta	Pink mucket.
Plathobasus cyphyus [1]	Bullhead.
Elliptio crassidens crassidens [1]	
Actinonaias ligamentina carinata [1]	Mucket.
Truncilla donaciformis [1]	Pawnfoot.

[1] Thought to be extirpated from the upper Ohio River.

Mr. TURNER. Mr. Chairman, as the new Director, I would like to thank you personally for the interest and support that you have given the Fish and Wildlife Service. The programs and resources that we have in West Virginia are important to us. Your personal interests on behalf of your office and staff are important to us, and I appreciate it, as does Mr. Lambertson.

Chairman **Byrd**. Well, we will certainly work together with you. I am impressed by your interest in the training center as you have outlined it, and as you gave us the diagrams on the other information earlier, and so we will be happy to work with you and wish you good luck.

DEPARTMENT OF AGRICULTURE

FOREST SERVICE

STATEMENT OF F. DALE ROBERTSON, CHIEF, FOREST SERVICE

ACCOMPANIED BY:

- **JOHN L. EVANS, DEPUTY ASSISTANT SECRETARY, NATURAL RESOURCES AND ENVIRONMENT, DEPARTMENT OF AGRICULTURE**
- **GEORGE M. LEONARD, ASSOCIATE CHIEF, FOREST SERVICE**
- **JEFF M. SIRMON, DEPUTY CHIEF, PROGRAMS AND LEGISLATION, FOREST SERVICE**
- **JAMES C. OVERBAY, DEPUTY CHIEF, NATIONAL FOREST SYSTEM, FOREST SERVICE**
- **JERRY A. SESCO, DEPUTY CHIEF, RESEARCH, FOREST SERVICE**
- **ALLAN J. WEST, DEPUTY CHIEF, STATE AND PRIVATE FORESTRY, FOREST SERVICE**
- **WILLIAM L. RICE, DEPUTY CHIEF, ADMINISTRATION, FOREST SERVICE**
- **DENNIS KAPLAN, OFFICE OF BUDGET AND PROGRAM ANALYSIS, DEPARTMENT OF AGRICULTURE**

BUDGET REQUEST

Chairman BYRD. This is the time scheduled for the review of the fiscal year 1991 budget for the Forest Service. Testifying this afternoon is Mr. Dale Robertson, Chief of the Forest Service.

The fiscal year 1991 budget request for Forest Service funds subject to annual appropriation totals $2,224,889,000, a decrease of $30,431,000 from the fiscal year 1990 postsequester level. Most of this decrease is associated with a decrease in the State and Private Forestry Program, offset by operating increases in the National Forest System and research programs.

The decrease attributable to one-time costs associated with repayment of prior year fire expenses is offset partially by increases for tree planting and land acquisition.

For the basic operating accounts of the Forest Service, forest research is proposed to increase $3,497,000 above last year's level of $145,175,000; State and private forestry is decreased $47,631,000 from last year's level of $104,248,000; and the operating programs for the National Forest System are increased $74,877,000, or 6.7 percent, over the fiscal year 1990 level of $1,136,000,000.

For construction, the budget proposal is essentially level with last year's appropriation of $222 million. Let me take a few minutes here at the beginning to ask some questions about the timber bridge initiative that has been discussed previously with this committee.

TIMBER BRIDGES

We have discussed the potential of timber bridges to provide another option for use of domestic hardwoods. I believe it is fair to characterize this program as a great success.

I have fought to make the funds available over the last 2 years for the timber bridge initiative, and to date, approximately $6.6 million has been appropriated for timber bridge demonstration projects, research and development, and technical information transfer programs.

How many demonstration bridges will be built with the funds appropriated to date? I should state, Chief, that we will include your statement in the record as though it was read into the record, and if you care to make any comments on it you are certainly free to do so, prior to your response to this question. Also, at this point in the record, we will insert the statement of Deputy Assistant Secretary, John L. Evans.

[The statement follows:]

STATEMENT OF JOHN L. EVANS

Mr. Chairman and Members of the Committee:

I welcome the opportunity to appear before you today to discuss the Fiscal Year 1991 budget for the Forest Service. I have with me today Mr. F. Dale Robertson, Chief of the Forest Service; Mr. George M. Leonard, Associate Chief; the five Deputy Chiefs: the nine Regional Foresters; the Directors of the Northeastern Forest Experiment Station and the Northeastern Area, State and Private Forestry; and the Supervisor of the Monongahela National Forest in West Virginia.

The budget request for 1991 is $3.1 billion, which is a moderate increase above the FY 1990 budget after adjustment for sequestration and fire suppression costs. Receipts from timber sales, recreation, grazing, and mineral lease activities are expected to be $1.5 billion. Before I discuss the proposed budget in more detail, I would like to briefly highlight two important initiatives contained in the proposal.

America the Beautiful

I am particularly pleased that the Forest Service budget proposes $175.0 million for a new tree planting initiative. This program will emphasize expanded environmental concerns and wise management of our nation's natural resources. The goal of the tree planting initiative is to plant a billion trees annually for the next 5 years on about 1.5 million acres of rural private land and to perform forest improvement on additional acres.

The rural cost-share program, $110 million, targets environmentally sensitive and economically marginal crop and pastureland. The community tree-planting program, $65 million, plants and cares for trees and forests in the nation's cities, towns, and communities. The overall initiative will help improve the quality of life in both rural and urban areas, reduce energy requirements to heat and cool buildings, address concerns with the buildup of atmospheric carbon dioxide, and demonstrate American commitment to worldwide forest management.

Beginning in 1991, the budget proposes to fund that part of the land acquisition program financed by the Land and Water Conservation Fund ($88.9 million) as part of America the Beautiful. This is a significant increase over historical levels. Lands and interests will be acquired within areas of the National Forest System for public outdoor recreation purposes, wildlife habitat improvements, and other related purposes.

Below-Cost Timber Sale Test

This is a test to evaluate the implications of phasing out certain below-cost commercial timber sales on national forests and to determine whether the loss in local economic activity and payments to counties can be offset through expansion of recreation. The test will evaluate the effects on 12 national forests (9 administrative units) beginning in FY 1991. The Budget eliminates additional investment in certain below-cost commercial timber sales on the test forests. During the first year of the test, timber offered would decrease from approximately 198 MMBF to 123 MMBF.

The Budget includes an additional $10 million to expand recreation activities for these 12 test forests to generate offsetting economic activities in terms of jobs, income generated, and revenue shared with the counties. Recreation opportunities will be expanded through additional investments, and special fee legislation will be requested to expand the authority to collect recreation fees. The Forest Service will cooperate with State and local governments, local communities, the private sector, and other interested groups in expanding recreation activities.

To the extent practical, partnerships and challenge cost-sharing will be used to stretch Federal funding and to generate economic activities in the private sector. All fees, after the 25 percent payment to States, would be retained by the Forest Service for enhancement of the recreation program. In addition to the recreational fees, receipts from recreation special uses would be deposited in this same special fund. The results of the test will be used to help determine national policy on below-cost timber sales.

The Budget Proposal

The proposed research budget is $3.5 million higher than the FY 1990 appropriation and has been significantly reoriented toward the most critical natural resource issues facing the Nation and world today. Emphasis is placed on six priority research programs, which include Global Climate Change, Water Quality, Threatened and Endangered Species, Expanding Forest Based Economies in Rural America, Southern Forest Productivity, and Catastrophic Forest Fires. Other research programs are slightly reduced. This will result in the merger of 11 research work units and the closure of 5 work units.

The 1991 budget for State and private forestry is below the FY 1990 appropriation, but cooperative funding overall will increase significantly as a result of the President's Tree Planting Initiative included in the new America the Beautiful account. Federal pest suppression is funded above the FY 1990 level, while cooperative pest suppression is limited to surveys and technical assistance. Cooperative fire protection is continued, but at a reduced level emphasizing specialized technical assistance to the States. There is also a reduction in the forest management and utilization program, but direct technical and financial assistance to NIPF land will receive $110 million through the Presidential Tree Planting Initiative.

The FY 1991 National Forest System request is approximately $75 million above FY 1990 and represents a substantial change from previous budget proposals in terms of program composition. There are significant increases in amenity programs.

We believe that the proposal is more balanced and better reflects Forest Land Management Plans as compared to past requests.

This proposal recognizes the increasing importance of the recreation program and expands the National Recreation Initiative begun in FY 1988. The request for recreation is $33.2 million over the FY 1990 appropriation.

The wildlife and fish habitat management program is increased by $3.6 million over FY 1990.

An increase of $10.9 million over the FY 1990 appropriation is proposed for soil, water, and air management.

The timber sales program for FY 1991 maintains the highest level consistent with the below-cost timber sales test and the forest plans. The program level decreases from 11.129 billion board feet called for in the FY 1990 appropriation to 10.564 BBF in FY 1991. However, only an 8.5 BBF sale level is sustainable in FY 1992 and beyond.

The request for the Construction appropriation is about the same as the FY 1990 appropriation.

Construction of facilities will focus on health and safety projects in Research, emphasize facility planning, replacement, and rehabilitation for Fire, Administrative, and Other Purpose buildings, and support the Below-cost Timber Sales Test in Recreation facilities construction and reconstruction.

The road construction funding level will provide $128.7 million for timber roads and support a 10.564 BBF timber offer program, $27.1 million for construction and reconstruction of recreation roads, and $25.9 million for construction and reconstruction of general purpose roads.

I am happy to announce that we are continuing to enlarge our Challenge Cost-Share Program. As you know, this has been a very successful innovation which benefits the recreation, wildlife and fish, research and road construction programs. Our budget includes $18.8 million for challenge cost-share activities, as compared to approximately $15 million in FY 1990. We expect to receive over $31 million in matching contributions.

Closing

Mr. Chairman, this concludes my remarks. I will now be glad to answer any questions the Committee may have.

STATEMENT OF F. DALE ROBERTSON

Deputy Assistant Secretary Evans has covered the signficant parts of our budget request. I would like to use my time this afternoon to add my emphasis to a couple of points he made and then talk about where I see the Forest Service going as we enter the decade of the nineties.

The Forest Service is pleased with the 1991 Budget. It is much better balanced than some previous budgets and it includes important initiatives. The President's tree planting program has a great potential to contribute to the quality of life across our great Nation. We are excited about this program and look forward to its implementation. The President has also supported a substantial expansion in land acquisition as part of his America the Beautiful Program. This will add important areas to the National Forest System for public use. The Budget calls for a test of phasing out below cost timber sales and offsetting the impacts on local economies by expanding recreation. This addresses an important issue and could help determine appropriate policy.

As Deputy Assistant Secretary Evans pointed out, the Budget reorients our research program to emphasize several critical natural resource issues which have major importance in this country and throughout the world. Past research programs emphasized commodity resources and were successful in increasing productivity. For example, we have been able to show significant gains in managing forests to increase wood quantity produced and improving quality and utilization rates. In recent years, increased attention has been given a broad array of forest management problems affecting wildlife, fish, water, and air quality. This has improved the balance in our research program. Consequently, research is now directly relevant to the decisions on many current issues. World-wide problems, such as global change, and regional problems, such as management needs for the northern spotted owl and red-cockaded woodpecker, are current examples.

The Forest Service has put a tremendous amount of effort into the National Forest Land Management planning over the last 10 years with the most comprehensive involvement of the American people ever attempted. These plans have resulted in a balance of programs different from that of past plans and different from that represented by our historical budget. With the tremendous involvement of the American people, their expectations run high that these plans will be implemented in a balanced way. Our priority job now is to round out Forest Service programs so that they better reflect the decisions made in our plans. I am proud of the President's FY 1991 budget for the Forest Service because it makes significant progress in this direction.

In fact, I believe the FY 1991 budget for the National Forest System is a more balanced budget than previous budgets transmitted to the Congress. As examples of this rounding out, I can point to the fact that our request for recreation use funding is over 50 percent greater than it was just 2 years ago when we came to you with our FY 1989 budget request. During the same time; our request for wildlife and fish habitat management has increased by over 85 percent; and our request for soil, water and air management by over 75 percent. The
increase in the request for wilderness management is almost 60 percent greater than two years ago, and the request for threatened and endangered species habitat management has increased more than five-fold. In addition, our successful challenge cost-share program has doubled thereby stretching federal dollars even further.

I am pleased with these trends. The rounding out of our budget better reflects the vast amount of public comments on our forest plans from people and groups all across the nation. That is the positive aspect of the program funded by this budget.

On the negative side, the multiple-use concept is under attack. The Forest Service is finding it increasingly difficult to achieve output targets for timber sales and minerals because of environmental challenges to our decisions through lawsuits and appeals. Even though we have had tremendous public involvement in developing these plans, we are having increasing difficulty in implementing forest plans. Costs are getting out of hand because of the elaborate documentation and procedural requirements to meet the test of the courts in making what used to be rather normal decisions in managing the National Forests. In addition to the costly procedures to meet environmental laws and associated court interpretation of those laws, these programs are also bumping up against the requirements of the Endangered Species Act in key timber producing regions. For examples, the spotted owl (potential listing) and red-cockaded woodpecker (already listed) are having major impacts on our ability to achieve the timber sale program.

We simply cannot run our timber sale and oil and gas leasing programs through the courts and expect the output targets to be achieved in a timely fashion within reasonable costs. We need to work with the Congress to agree upon an acceptable strategy to deal with our present situation. It is unreasonable to expect Forest Service employees to achieve the timber sale and mineral programs without taking into account the existing situation. Expectations have to be adjusted to what can be reasonably achieved even with extra effort on the part of Forest Service employees.

Specifically, we are going to have to adjust timber sale targets in Oregon, Washington, and California because of the spotted owl situation. Until final decisions are made on the spotted owl, we cannot determine the precise impact of these decisions on our timber sale program. In the case of Idaho and Montana, about 25-30 percent of our timber sale program is in roadless areas which are controversial, require an EIS, and are likely to get bogged down in appeals and lawsuits. These challenges have incrementally reduced the volume of timber sales in the pipeline over time to the point that there is little flexibility left to accommodate delays for any reason. Most of our timber sale effort is going into current year sales rather than advance timber sale preparation for future years. Funding is important but does not solve the basic problem. We need to work with the committee over the next few months to get capability, budget, and expectation of timber sales and mineral leasing programs in balance with what can actually be accomplished in FY 91 and future years.

This concludes my prepared remarks, and I will be glad to answer questions.

Mr. Robertson. Mr. Chairman, if we can put my statement in the record, then we are prepared to respond to your questions.

Chairman Byrd. All right.

TIMBER BRIDGES

Mr. Robertson. Regarding your question on the number of timber bridges, there have been 147.

Chairman Byrd. 147; and that was how many in 1989?

Mr. Robertson. There were 80 in 1989, and 67 in 1990.

Chairman Byrd. How many applications were received for the demonstration program for fiscal year 1990?

Mr. Robertson. I believe there were 95 applications, one-half were from West Virginia and one-half were from the remaining States.

Chairman Byrd. Have the fiscal year 1990 demonstration projects been decided yet?

Mr. Robertson. Well, West Virginia is still finalizing project locations and they will be announced shortly. The other 37 bridges have been announced in the other States.

Chairman Byrd. And the estimate is about what for West Virginia?

Mr. Robertson. There will be about 30 demonstration bridges in West Virginia, and 37 constructed outside West Virginia.

COSTS OF TIMBER BRIDGES

Chairman Byrd. What is the amount of cost-shared funds contributed by States?

Mr. Robertson. About $5.8 million, and that results in about $1½ million of non-Federal dollars for each Federal dollar.

Chairman Byrd. What has been the average construction cost for the demonstration bridges?

Mr. Robertson. About $70,000.

Chairman Byrd. How would you compare this with steel or concrete bridges if they were used in the same location?

Mr. Robertson. Timber bridges cost about 30 percent less than steel or concrete bridges. So, that means that a steel and concrete bridge would cost about $100,000.

DURABILITY OF TIMBER BRIDGES

Chairman Byrd. What is the lifespan of these timber bridges as compared to the steel and concrete bridges?

Mr. Robertson. We think about 70 years.

Chairman Byrd. As compared with?

Mr. Robertson. This is about three times as long as the average life of a steel or concrete bridge. The reason for that, Mr. Chairman, is the deteriorating effect that salt and other deicing agents have on steel and concrete, but which do not affect wood.

Chairman Byrd. So, the timber bridges last longer, and cost less?

Mr. Robertson. That is true. It is a good deal.

TIMBER BRIDGE INFORMATION RESOURCE CENTER

Chairman **Byrd**. Given that your budget request for timber bridges and operation of the Timber Bridge Information Resource Center is zero, what will happen to the Center?

Mr. **Robertson**. We do have an increase in our budget for wood utilization, so we will take about $500,000 from the wood utilization line item, and keep the Timber Bridge Information Center open in West Virginia.

So, we will be scaling it back from about $740,000 to about $500,000.

Chairman **Byrd**. Has all the research been completed?

Mr. **Robertson**. No; it has not. We need to do some additional research on guard rails. We are doing a lot of additional work on trying to get testing of species other than oak for use in the construction of wood bridges.

We need to do some evaluations on these demonstration bridges to help facilitate getting a bridge code approval.

Chairman **Byrd**. When will your testing on the alternative species begin?

Mr. **Robertson**. We have already begun on about seven species. We are testing southern pine, red pine, hemlock, and four other hardwood species.

TIMBER BRIDGE CONSTRUCTION

Chairman **Byrd**. What progress have you made in addressing possible construction combinations of timber decks on a bridge that has steel or concrete girders?

Mr. **Robertson**. I think we are making pretty good progress. We had some funds in our budget last year of which we provided $150,000 to West Virginia University. We have two demonstration bridges, in North Dakota and in Texas, where we have a steel support system with wood decking.

So, we will be evaluating these bridges.

Chairman **Byrd**. What potential does that combination have? Does it allow for higher load limits than would a steel or concrete bridge weighing the same amount?

Mr. **Robertson**. Yes; it would, because wood decking weighs much less than either steel or concrete decking. So the difference in that weight can be shifted so as to increase the weight load on those bridges with the same support structure.

Chairman **Byrd**. I intend to continue supporting the timber bridges, and to see that Federal funds are available to make this technology accessible to more users. With the funding provided over the last 2 years, approximately 150 timber bridges have been built, or will be.

The total costs for these bridges, including Federal and non-Federal contributions, is approximately $9.8 million. Had traditional methods of steel and concrete construction been used, costs for bridges in these same locations would have approached $14 million.

It is fair to say then that the timber bridge initiative has saved the taxpayer approximately $4.2 million in the replacement of deficient or obsolete bridges. Given the magnitude of the problem, with over 238,000 bridges across the country, representing 41 percent of the total number of bridges, considered to be deficient and obsolete, and in need of repair, timber bridge technology must continue to be explored as an alternative to address our basic infrastructure requirements.

While all deficient bridges may not be immediate candidates for timber bridges, those throughout rural American are ideally suited to take advantage of this technology. In many cases, a timber bridge is more aesthetically pleasing in a rural setting on a smaller road.

Timber bridges offer an alternative use for hardwood species that are perhaps not of furniture quality. I intend to do what I can to restore the timber bridge program in the fiscal year 1991 budget.

I understand that you are faced with difficult budget decisions, but so are we here in the Congress, and I believe it to be a correct and proper decision to invest resources into a program that offers alternatives that will save the taxpayers money in the long run.

How many of the 238,000 deficient and obsolete bridges identified as in need of repair or replacement are likely candidates for timber bridges?

Mr. ROBERTSON. About 80 percent, or 190,000.

Chairman BYRD. How much timber would be utilized in making these replacements if they were done with timber bridges?

Mr. ROBERTSON. About 4 billion board feet.

Chairman BYRD. How many jobs would be generated with an intensive timber bridge replacement program of that kind?

Mr. ROBERTSON. I think we could sustain an industry of about 5,000 jobs over a period of several years.

Chairman BYRD. Let me just briefly turn to another area before I turn to my colleague on the left. Well, let me turn to my distinguished colleague, Senator McClure, and if he has any questions, I would prefer that he proceed.

Senator MCCLURE. Thank you very much, Mr. Chairman. I would like to defer, if I may, to yield to my colleagues who may not be here for as long as I will.

Chairman BYRD. Very well. Senator Stevens.

ALASKA TIMBER SALES

Senator STEVENS. Thank you very much, both of you. I am concerned, obviously, with the Alaska timber base, and I note that this year the short-term preparation level is 100 million board feet, as compared to an administration level of 125 million board feet, and that left a deficit of some 25 million board feet.

This year 25 million board feet, and 20 million board feet last year, and it looks like we have another deficit for the following year. Can you tell me whether with this deficit annually how we are going to maintain the supply?

Mr. LEONARD. Senator, as you remember, there was much concern over the issue of administering the timber fund in the early eighties as we were preparing more volume than the industry there in Alaska was able to process. So we made a change and said that we would bring the program into balance, and we dropped the program down to about 300 million board feet in the 1985–86 period.

Since that time, the industry in Alaska has recovered the end dollar value, and other factors have led to very excellent, steadily improving, markets for Alaskan timber. Unfortunately we have not brought the sale program back up and followed it either for the long-term or the short-term sales.

So the volume under contract is continuing to decline; and if you look at the total volume available to the short-term sales, it appears to be adequate. And when you look at the distribution by individual companies, there are several companies, particularly Seeley Lumber Co., which are beginning to get down to a very marginal volume on their contracts.

Senator STEVENS. Well, aren't some of the supplies that are theoretically there tied up in litigation?

Mr. LEONARD. That has had a significant impact on our ability to sell timber, but, of course, we have not been able to increase the hidden finance level to match the level of the previous years' harvest.

For example, in Alaska in 1989, we harvested nearly 440 million board feet, total volume, where our finance program is substantially lower than in the other States.

Senator STEVENS. Well, your budget distinguishes between short-term and long-term preparation?

Mr. LEONARD. Yes.

Senator STEVENS. And both of them, however, are in deficit as compared to the amount that is needed under Forest Service figures?

Mr. LEONARD. That's right. It simply has not kept up with the very strong market for Alaska.

TIMBER SUPPLY VOLUME

Senator STEVENS. And you also assume, I am told, in your explanatory notes that although the total unharvested volume under contract is higher than warranted by the harvest demand ratio, that portion under contract—to the most active purchasers is relatively low at this time?

Mr. LEONARD. That is correct.

Senator STEVENS. My information is that that assumption is not valid, and that many firms are very much in need of short-term timber supply volume this year?

Mr. LEONARD. True. Again, if you look at the total volume that has been made available to the smaller firms, the total volume looks pretty good; but to the active firms, their volume under contract is very marginal to allow them to carry out a normal course of operation through this current year or through fiscal year 1991.

Senator STEVENS. Well, can you give us for the record what would be the necessary funding to maintain the levels of harvest consistent with the levels of administration figures?

Mr. LEONARD. Yes, we can furnish that.

[The information follows:]

TONGASS NATIONAL FOREST

We estimate that funding would be $48,293,000 to maintain a 400 million board foot program from the Tongass Timber Supply Fund. This would maintain the levels of harvest consistent with the levels of our administrative figures.

LITIGATION

Senator **Stevens**. I would like to know also if we can get the figures on how much is actually held up in litigation and estimate now how much longer that litigation is going to last.

Mr. **Leonard**. We will do that.

[The information follows:]

Tongass National Forest

The current volume under litigation is 1.3 billion board feet of which 69 million is actually under a restraining order. It is difficult to estimate the length of time the volume will be tied up. It normally requires about 1 to 2 years from the time a decision to appeal work through the administrative procedures and then complete the judiciary procedure to clear a litigated sale. Also, the volume is continually changing as active sales are processed and new sales are added into the process.

NORTHWEST RESEARCH

Senator **Stevens**. Another question that I have pertains to the—Pacific Northwest Research Station. There are four areas of research that have been deleted this year that disturbed me a great deal. Two of them are in Fairbanks—the biomass research unit, and the forest research management unit.

They both have been cut. Also the Sitka black tail deer research proposal, and the Anchorage inventory of the Taiga forest. Can you tell us why there has been such a heavy cut? That is a substantial cut in the overall Alaska research levels. Why did they take such a heavy cut this year?

RESEARCH BUDGET

Mr. **Robertson**. Our research budget this year represents a significant shift in terms of where our research priorities or dollars will be in 1991. Without much increase in our research budget, we are taking on a significant increase in things like water quality, global change, and a few other high priority items, which means that our basic foundation research has been reduced across the board in many, many, areas.

And Alaska is just one example of that, but you are not alone in those kinds of reductions.

Senator **Stevens**. Well, it represents an overall cut of almost one-third in the foundation research, and I think we still have the highest level of timber availability in the country don't we?

The interior forest project, for instance, that deals with the field work to tell us what those interior forests can provide, in terms of inventory, and that is a significant project; and the two Fairbanks projects are most significant, in terms of needed research, and the biomass research unit in Fairbanks, for instance. Have you cut everywhere else from 25 to 30 percent?

Mr. **Robertson**. In our basic research program, we have cut about 16 percent across the board.

Senator **Stevens**. And how much does that amount to nationally?

Mr. **Robertson**. Our basic research program was cut from $97.5 million to $85.7 million. So, it is about $12 million nationally; and our overall budget is about the same, but there is some priority research, the biggest one being global change, which represents about a $13 million increase in those high priority items.

So within a stable total budget, there is considerable shifting going on in this budget.

Senator STEVENS. Well, I have nothing against global research, but I don't see any reason why we should stop in midstream some of these long-term projects that have been ongoing. One of them is a 25-year inventory of the Taiga Forest, and it looks like you cut out a whole year.

Senator REID. Would the Senator yield?

Senator STEVENS. Yes.

GLOBAL WARMING RESEARCH

Senator REID. You know, I think that one of the things that we should look at as a committee, there isn't an agency that comes before us that isn't spending a huge amount of money on global warming things.

And I think that we should do some coordination to find out, you know, what is happening. For example, the U.S. Geological Survey, and a huge amount of their budget this year is on global warming, and I think we are being global warmed by everybody, and I think that we should take a look at the overall global warming expenditures of all the agencies that appear before this subcommittee.

Senator STEVENS. The Senator makes a good point, Mr. Chairman. When I look at that 500 inches of snow at Valdez this year, you can't convince me that we have a lot of global warming here. [Laughter.]

Senator REID. I agree—and excuse me just one more time, Senator Stevens, but I agree that we should look into global warming, but why do we need all these piecemeal programs? Let's just have——

Mr. ROBERTSON. If I could respond, Senator Reid. This has been coordinated into an overall global climate or global change research program within the administration, and so there is an overall coordination of these research programs among the various agencies.

And because of the potential significant impact on forests, the Forest Service has a significant portion of that overall global research program.

Chairman BYRD. When the Secretary of the Interior and Agriculture come before the Committee, we can ask questions and find out just what or how massive this is, and how well they are coordinated.

Senator STEVENS. I have just have three short questions left, and I think that the Senator from Nevada makes a good point; and that is that, I, too, would like to see the overall budget, and see where we are going and where it is coming from.

JUNEAU LABORATORY

For instance, down in Juneau, the Forest Service entered into a new lease for 5 years, and moved from the Federal building to a new laboratory, but I understand that there is no money in this budget to pay the Forest Service costs of that new laboratory.

The State legislature has indicated a willingness to share a portion of the costs, but we don't have any idea what level of funding the Forest Service will provide for the design and planning associated with building a new lab with the State of Alaska. Do you have those figures? Can you provide them for the record?

[The information follows:]

Design and Construction Costs for New Juneau, AK, Laboratory

Chancellor Lind of the University of Alaska, Southeast, has offered to help the Forest Service construct a new laboratory on the Auke Lake campus of the university. The Forest Service would occupy this building at the conclusion of the new 5-year lease in temporary quarters. The lease was executed because the research unit had to vacate the Federal building immediately while asbestos is removed.

Preliminary cost estimates by the university architect, Mr. Jack Volever, suggest that $950,000 is needed to do preliminary planning and design of the new building. The chancellor offered $200,000 in State funds for planning and design if the Forest Service would match his offer with $750,000.

Until preliminary plans are prepared, no firm estimate of actual site preparaton and construction costs will be available.

Funds for planning and design are not included in the research construction budget line item of the President's budget. It would be our number four research construction priority; following the Columbia, MO, laboratory, Flagstaff, AZ, laboratory, and accelerating the move into the Albany, CA, laboratory because of earthquake damage to the Berkeley, CA, station headquarters. None of these projects is included in the President's budget either.

CONSTRUCTION FUNDING

Mr. ROBERTSON. There is none in the 1991 budget; no funding for the construction.

Mr. STEVENS. But you have to leave some. We have already leased the building.

Mr. ROBERTSON. Maybe I should ask Dr. Sesco, the Deputy Chief of Research, to respond to that.

Dr. SESCO. Yes; you are correct, Senator Stevens. We are having to vacate our current facilities because of an asbestos problem, and we will be moving into leased space, and it is my understanding that some of the space costs that we are now paying would transfer over and help support that lease, but I cannot give you the exact amount.

Senator STEVENS. Well, I am told that we need money for planning and design costs for a new building. Can you please provide us with the amount of funding you will need for this activity. I am told the State may contribute $200,000 for planning and design. What is the Federal share through the Forest Service?

I would like to see if you could give us an explanation for the record on what would be needed to get this going.

OILSPILL RECOVERY

Two other short questions, Mr. Chairman. How are you getting the money for your oilspill recovery activities? The Forest Service, in case that the members of the committee don't know it, owns substantially the shoreline of Prince William Sound.

And you have been very, very much involved in it, and I understand that there has been some shift now on the part of Exxon of paying the costs that were incurred by the Federal agencies.

Can you tell us where you are getting the money to meet your oilspill recovery costs?

Mr. ROBERTSON. We have borrowed some money from other funds, like timber salvage funds, on the assumption that Exxon is going to pay us back, but Mike Barton has been involved in the details, and I would ask him to explain where we are on that. Mike Barton is our regional forester in Alaska.

Senator STEVENS. Mr. Chairman, if I might just say that this is just the beginning. Each one of these agencies have substantial costs, and Exxon has indicated that they are not going to pay some of those costs, and they have used money out of this years budget, and now before October 1, they have to make that up someways; and my question is, what are you going to do?

Mr. BARTON. We have reprogrammed about $8.6 million in this fiscal year for the damage assessment portion of the work. The cleanup portion of the work is being reimbursed on an ongoing basis by Exxon on an agreement that we got with them right after the spill occurred.

But it is the money for the damages that remains the problem, and we do need to borrow from other accounts. The Secretary has notified the committee that he intends to move the $8.6 million for fiscal year 1990 into the oilspill account.

And we will need to do the same thing, or at least figure something out with OMB for 1991 as well. For 1992, we will have it in the budget request.

Senator STEVENS. Well, the $8.6 million, did you take that out of an Alaska account?

MANAGEMENT OF SUBSISTENCE ON FEDERAL LANDS

Mr. BARTON. No; it was a national account of timber sales.

Mr. ROBERTSON. Timber salvage sales. I believe that the committee has been notified that is our intention.

Senator STEVENS. Well, one of the peculiar Alaska situations, gentleman, and Mr. Chairman, is that our courts have ruled that the State law that permits compliance with the Federal law for subsistence for rural residents under our hunting laws to be unconstitutional under the State constitution.

FISH AND GAME MANAGEMENT

You, it appears, will have to take over management of subsistence on Federal lands as of July 1. Are you prepared to undertake that activity, and do you know how much money it is going to cost you if you have to start on July 1, to start administering fish and game management on the Federal lands that you manage in Alaska?

Mr. ROBERTSON. I would ask Regional Forester Barton to answer that.

Mr. BARTON. We intend to be ready on July 1. We do not have cost estimates as of yet, and it is dependent upon how much cooperation the State can legally provide the Federal agencies, and that would determine the specific activities that will need to be funded out of the Federal budget for 1990–91.

But we do intend to be ready, and we intend to have interim regulations issued by July 1.

Senator **Stevens**. But it will entail additional costs for you to operate Forest Service land in Alaska starting July 1 if the problem is not solved by then?

Mr. **Barton**. That is correct.

Senator **Stevens**. Can you give us for the record an estimate on how much you will need for this fiscal year and for fiscal year 1991?

Mr. **Barton**. Again, depending upon the amount of cooperation that is provided, but the range would be between $200,000 additional in 1990, to about $1 million additional in 1990, if there is absolutely no ability on the State; and in 1991, it will range somewhere between $1 and $5 million.

Senator **Stevens**. I said that was the last question, but I forgot one small item that continues to erupt about every 2 weeks now, and that is has the Mt. Redoubt volcano increased your costs at all, Mike?

Mr. **Barton**. No; very little.

Senator **Stevens**. Well, the committee is going to hear a lot about that during this session unfortunately, Mr. Chairman. I thank you very much.

Chairman **Byrd**. Senator Reid.

NATIONAL FOREST SYSTEM 100TH ANNIVERSARY

Senator **Reid**. Thank you, Mr. Chairman. Mr. Chairman, I have a couple of questions, but I want to make a point. You know, we just celebrated Earth Day, and I think that this should compel us to examine how well we treat our natural resources, and I think that we would all agree that the Nation's forests are among our finest resources.

And I would like to suggest that it is time that we review and revise, if necessary, our role in the forest, because another anniversary is coming up in 1991 as I understand it, and that is the 100th anniversary of our National Forest System.

The 100th birthday is certainly reason to celebrate, but again I think it is time to review and revise. The Forest Service has done some fine work, of course, managing our forests. Yet, I believe that some changes are due, and the point I want to make is that I think maybe we are spending too much money on overhead, and not enough on the ground.

WASHINGTON AND REGIONAL OVERHEAD COSTS

With the work that I have done in Nevada, I really feel that is the case; that there is just too much on overhead, and I think that we need to figure out a way to cut down overhead. I understand that billions, or hundreds of millions of Federal dollars have been spent in land management plans for the Nation's national forests.

What is the average percentage of funding for those land management plans?

Mr. **Robertson**. This 1991 budget is at about 72 percent.

Senator **Reid**. I just think that is too low. I think that there should be more money spent on the ground. What percentage of Washington overhead costs are funded, and then regional?

Mr. **Robertson**. The 72 percent does——

Senator **Reid**. Covers it all?

Mr. **Robertson**. Yes; covers it all.

Senator **Reid**. But can you break that down as to what is spent in Washington overhead, and regional overhead?

Mr. **Robertson**. I can tell you how much money is being budgeted for the Washington overhead.

Senator **Reid**. Would you do that for me?

Mr. **Robertson**. Yes; I would be happy to do that.

Senator **Reid**. Because I think that says something about our priorities. Shouldn't we be taking care of our forests, first, and then our offices, second? I know for you that it is not on the ground, and I know that you have tremendous responsibilities, but I just think that we should look at how we could spend more of this money on the ground. If this were a business, and we were spending huge percentages on overhead, the business would not last very long.

Mr. **Robertson**. We are not spending 70 percent on overhead.

Senator **Reid**. Well, could you break that down then into overhead? Do you understand the difference?

Mr. **Robertson**. I can tell you how much we are spending at the national level, and how much we are spending at the regional levels, and I suspect that would end up about 15 percent or so.

Senator **Reid**. I think it would be higher than that, but you get the figures——

Mr. **Robertson**. Maybe 20 percent.

Senator **Reid** [continuing]. And we will look at it. I am very interested in that.

[The information follows:]

Overhead Costs

We estimate the 1990 and 1991 overhead cost for our Forest Service regional offices to be about 11 percent, while the cost of the Washington overhead is approximately 3 percent.

LAKE TAHOE DEADWOOD

Senator **Reid**. One last question, Mr. Chairman. California and Nevada are already experiencing July conditions, and we are still in April; and the West drought could mean the worse fire conditions in recent years.

And in the Lake Tahoe area, we have a unique problem, in that the Federal Government owns not only a lot of Forest Service land, but we have purchased a lot of private land and put it into the public sector, because the Lake Tahoe regional planning agency simply could not build on those areas. So, we have purchased those lands.

On those lands, there are huge amounts of deadwood. They just aren't being maintained, and I received a call just shortly before coming over here from one of the newspapers in the Lake Tahoe area, saying, you know, what are you going to do about it. You are not a very good landlord if you don't keep your land up very well. What is the answer?

Mr. **Robertson**. If we have dead trees inside of Lake Tahoe, we need to do something about removing those.

Senator **Reid**. But the problem is that you just don't have the manpower to do it. Your forest rangers out there are really overworked.

Mr. **Robertson**. That is a problem that we have throughout the Sierra Nevada, and because of drought conditions we are having a tremendous mortality due to the conditional stress on the trees, and insects and disease hitting them.

Senator **Reid**. And in that beautiful Lake Tahoe basin, there are areas where half the trees are dead, and so I think we need to at least anticipate that there is going to be some significant problems there, and not only with the forests, but with people who live within the forests.

Mr. **Robertson**. Yes, sir.

Senator **Reid**. Thank you, Mr. Chairman.

Mr. **Leonard**. If I might interject, Senator Reid. You know, the only practical way that we can get on top of that volume of dead material from bug epidemics and the drought situation there is to use logging, and that is the only way that we can finance it.

And that is the only way that you can get a lot of material out of the way and pay, or partially pay, its way out of the woods.

Of course, there are some concerns about logging in the Tahoe basin. But we will be harvesting well over 1 billion board feet of salvage material in the California region, largely as a result of that drought situation.

Senator **Reid**. The California region includes Nevada.

Mr. **Leonard**. Yes; includes Nevada, yes. Well, no, it includes the Lake Tahoe basin.

Senator **Reid**. Thank you very much.

Mr. **Leonard**. Thank you.

Chairman **Byrd**. Senator Domenici.

BELOW COST TIMBER SALES

Senator **Domenici**. Thank you very much, Mr. Chairman, and Senator McClure. I will try to be brief. Could I ask you, Senator McClure, with reference to below-cost timber sales and further reductions in forest funding, would it be fair to assume that you were going to inquire regarding those issues?

Senator **McClure**. That's a fair assumption. [Laughter.]

Senator **Domenici**. Then might I, since you will probably do much better than I, might I submit the two questions I had in mind then, in the event that they are the least bit relevant after you have finished your questions?

Chairman **Byrd**. All right.

ARCHEOLOGICAL PROTECTION

Senator **Domenici**. Let me ask first, a question that is totally national, and then two New Mexico issues. I have a great interest in cultural resources and archeological resources protection, because there are so many great archeological treasures that should be preserved.

But as you know, they are being stolen, looted, and vandalized, and sometimes even when we know where they are, we are not handling them properly. I note that we have been making a little bit of progress with the new criminal laws. We have changed them substantially a couple of times, and now we can get some successful prosecution of the looters.

But we also have mandated under the 1988 ARPA Amendments, that each of the departments, including the Forest Service, develop plans for archeological surveys of their lands, and to prepare a schedule for surveying areas that are likely to contain the most important resources. Congress further mandated that the Forest Service would develop processes for reporting suspected looting and vandalism incidents on these lands, all of this in support of the enhanced criminal prosecution activities. Could you just briefly tell us how that is going?

Mr. ROBERTSON. Well, first of all, this budget includes about $2.8 million increase to try to get on top of the cultural resource surveys. Basically what we are doing in the Forest Service is that any time we go out and do any kind of a disturbance, either for road building, or timber harvesting, or anything else, we go in and do a survey.

And we have been identifying about 13,000 cultural properties a year as we make these surveys on the national forests. Now, where we are falling behind is in evaluating those properties, and that is where we need to put some more emphasis.

But basically what we are doing is trying to identify and protect what we have, and protect that as we go about doing these kinds of activities on the national forests.

Senator DOMENICI. Then would you tell this committee that the additional money the Forest Service has requested seems, under a logical and orderly plan, to be sufficient to continue this process in a manner consistent with the nature of the problem?

Mr. ROBERTSON. I would say this, Senator Domenici. It will be a small step of progress. The job to be done is so big, but it is a good step towards progress, and we need to be putting some priority on this to make the progress.

Senator DOMENICI. So you are saying that you could use more funding, but this is better than what we have been doing in the past, and you are on some kind of a long-term plan that makes sense?

Mr. ROBERTSON. Yes, sir.

USER FEES FOR BROADCASTING ANTENNA

Senator DOMENICI. Could I now ask a question with respect to a matter that Senator McClure, and I, and in fact the whole conference committee worked on, which is user fees charged for the sites of antenna for broadcasters, both public and some that are public service oriented?

COMMUNICATIONS SITE FEES

My recollection is that on April 13, the Forest Service issued a report in compliance with the fiscal year 1990 Interior Appropriations Act that it was going to take three steps to secure the communications site fees to ensure that they adequately reflect fair market value, with which we were all concerned. In other words, the Forest Service would not use Arizona to determine Idaho fees, or Arizona for New Mexico fees, but rather properties that intersect.

When will the Forest Service be prepared to announce its findings, and will they continue to keep the members of this committee informed on the status of the review that we mandated?

Mr. ROBERTSON. These appraisals will start this month, and we think it will take about 3 months or so to do that. Then we need to discuss the appraisal with the permittees and others that would be affected.

So, I would think that sometime this summer we should be able to complete that; and then in response to your last question, yes, we will keep you and other members of the committee fully informed.

MEXICAN SPOTTED OWL

Senator REID. The spotted owl has a lot of national attention, and most of it—most of the attention is on the extreme west coast of the United States, but little old New Mexico has its problem with the Mexican spotted owl, and I am somewhat concerned.

We want to make sure that you are being given adequate resources to do the inventory work, because we are in an awful bind, and if we can't get our—get enough resources to do the inventory, then we are even in a worse bind.

The 1991 budget for the entire Southwest region is only $100,000, as I understand it, for the continuation of this inventory. Would you, given that proposed level, when do you think you could complete the studies, and could you not use additional moneys to complete and accelerate these studies?

Mr. ROBERTSON. I have with me Regional Forester David Jolly, from Albuquerque, who would be glad to answer that question.

Mr. JOLLY. We have asked for or identified a need for about $1.6 million to produce the inventory, but I have not looked at how long it would take if we only get $100,000.

There are some other things that we have asked for, also, and we need to do some administrative studies on impacts of timber harvesting on the Mexican spotted owl, and those kinds of things, and those total over $2.3 million.

So, if we fund the inventory at $100,000, it will be quite some time before it can be completed.

Mr. ROBERTSON. It is a critical problem, and the Fish and Wildlife Service now has a petition to examine them for possible listing as a threatened species. If all of that were to take place, then we could end up in the same situation that we are in with the northern spotted owl in the Pacific Northwest.

LAS HUERTAS CANYON

Senator DOMENICI. Mr. Chairman, I have a question regarding a recreation area in New Mexico, called Las Huertas Canyon, but I believe that we can get an answer for the record rather than to burden the committee. Other than that, might I ask your regional forester if the Forest Service supports a comprehensive rehabilitation initiative for the Las Huertas Canyon Recreation Area?

Mr. **Jolly**. Yes; we do.

Senator **Domenici**. And the questions are a little more detailed, but I would ask that they be answered in writing.

Chairman **Byrd**. All right, they will be submitted. Can you get your respond in within 3 weeks, Chief?

Mr. **Robertson**. Yes, sir.

Chairman **Byrd**. Senator Hollings.

Senator **Hollings**. Thank you, Mr. Chairman. Chief Robertson, I have one of those birds, too. [Laughter.]

HURRICANE HUGO

The red cockaded woodpecker. But it's a priority down below people, towns, and the entire areas struck by Hurricane Hugo now. Hugo destroyed over 6.7 billion board feet of timber which is more than all the timber downed on Mount St. Helens, and all of Frederick, and all of the Yellowstone Park fire. This one, Hugo, knocked out way more forestry than all of the rest combined.

I mention that to give everyone who is not familiar, and I think the Chief is, familiar with it. I flew over the area the other day going down to the National Guard in a helicopter, and I thought we had built some firebreaks in there. But I could tell you—and in fact I went there and back after a few days in the woods down at Fort Stewart—we don't have enough firebreaks.

We have had 60 fires in there already, and we have on an average 4 to 6, and all this timber is just lying there, and you can't get to it. I am afraid for the little towns like Colesville, and Jamestown, and others, and those are just bordering the Francis Marion National Forest. I am not talking about the area surrounding Fort Sumter National Forest, and the hurricane went all the way up to Charlotte and there was forestry lost in the State of North Carolina.

FIREFIGHTING NEEDS

What are we doing now? The first thing they paid for was equipment because they didn't have enough equipment. Do we have enough equipment now?

Mr. **Robertson**. I would ask Regional Forester Alcock, who is here from Atlanta, to respond.

Senator **Hollings**. And, in fact, they were telling me that a lot of this equipment was being shipped overseas for other problems, and they couldn't get anything from Caterpillar, or LaGrange, or wherever they were ordering it from. My question is, are we getting enough heavy movement equipment to clear, and build the firebreaks?

Mr. **Alcock**. Mr. Chairman, and Senator Hollings, we are making good progress. We have a good amount of equipment that is able to operate in the conditions that we have there on the ground.

As you are aware, a lot of that is very wet, low country, and it takes the kind of equipment that can operate in these areas, what we call high floatation type of equipment. We probably have enough to get us through this spring, and I am talking now just about the national forest side of things.

But this danger from fire is not going to go away in just a matter of a few months. It is going to be with us for several years; and in terms of protecting the total area, we do not have, nor does the State, nor do private operators have adequate equipment to do the job.

Senator HOLLINGS. I think it ought to be understood about the 4½-million acres lost in that 2½-million acres, or 70 percent, are privately owned, and only some 360,000 acres, I think, are really the Federal responsibility. The majority of it, really, is privately owned, and then you get to a fellow of Strom's age, or my age, and you have a 30-year growth destroyed, and you must ask yourself, why should I get the money to go in and clear it, and try to reseed it, when I can put the money into something else, since I will have to wait another 25 or 30 years.

Now, Strom is going to make the 30 years, but I don't know that I am. [Laughter.]

Now, that's the problem out there, and so what are we doing about the private lands?

Mr. ALCOCK. We have attempted to help the private landowners by working through the State forester. In South Carolina, that is Jack Gould; and then, of course, there is a special Governor's committee that has been set up to advise Governor Riley about how he should attempt to help the private landowners.

Senator HOLLINGS. You mean Governor Campbell.

Mr. ALCOCK. I'm sorry. Yes; Governor Campbell. It formerly was Governor Riley.

FIREBREAKS

Senator HOLLINGS. You have the bureaucracy, and you have me, and they have you. I mean, there are a lot of people talking about it, but what are we actually doing about it. How many miles of firebreak have you built in the Francis Marion and Fort Sumter National Forests so far?

Mr. ALCOCK. Up until this point, we have about 175 miles.

Senator HOLLINGS. They told me 160 miles, and that's a little bit more. How many more do you expect to build; about another 170; isn't that right?

Mr. ALCOCK. Yes; that is what it would take to really make everybody feel a lot more comfortable.

Senator HOLLINGS. Right, and do you have the request in here from Chief Robertson for it?

Mr. ROBERTSON. This budget, Senator, was prepared before Hugo came along.

Senator HOLLINGS. Then can you give me the amended amounts so that the committee will know? I don't know that they will approve it, but I would certainly like to have the information, and whether or not you want it.

Mr. ROBERTSON. Well, we have——

Senator HOLLINGS. Don't give me the Darman runaround. I want to know whether you at the forestry level want the assistance. Darman doesn't want anything. I want to know what money is necessary so that I can intelligently ask for it, and I don't want to ask for more than what we need.

I work for the private effort, because you are going in there and trying to save the area along with the rural volunteer fire agencies and departments that are around there. Mr. Chairman, there are plenty of them, and you would understand their importance from living in West Virginia.

There are some good volunteers that have never had any real crisis, and now they don't have the equipment at all to move the enormous amounts of downed timber. The manpower is there, and the willingness is there, but what are you doing to help them? You know very well that if a fire starts on private land, it is going to run right over into Francis Marion, I can tell you that.

You have not built a firebreak around from all the private holdings have you?

HURRICANE HUGO ASSISTANCE

Mr. ALCOCK. No, sir; our needs were initially established in not only South Carolina, but also North Carolina, in Virginia, and in Puerto Rico, at $244 million. This was done right after the storm.

Now, this is obviously not all in 1 year, and some of those costs run out as long as 10 fiscal years such as the reforestation effort. Our immediate needs are uncovered by any of our budget preparations are $28 million.

Senator HOLLINGS. This year?

Mr. ALCOCK. Next year our needs are $34 million.

Senator HOLLINGS. But that is for the entire effort, and not just Hugo is it, or is it just Hugo?

Mr. ALCOCK. That is Hugo, and in all areas where it caused damage, and it also includes what you were referencing earlier, which is our assistance to the States to help private landowners. A cost share.

Senator HOLLINGS. That is a cost-sharing basis then.

Mr. ALCOCK. Right.

1990 FARM BILL

Senator HOLLINGS. Incidentally, the Agricultural Committee in the 1990 farm bill unanimously approved our Emergency Reforestation Program to authorize assistance to these private landowners in forest management. It has been included as a section in the 1990 farm bill. Senator Leahy, our fellow colleague here on the committee, chairs the Agriculture Committee and was very helpful.

But I want to follow through. Give me all the figures so that the committee will know what is needed to prevent a fire disaster. I don't want to belabor and take the committee's time, but when we get to markup we ought to have the accurate information. I don't want any more than what we need.

Once we get the request, then we can determine how much assistance can be provided to protect the endangered species, the people, the towns, the whole area. And with an average of four to six fires in Francis Marion Forest yearly, under normal conditions, I don't see how you are going to control it under these conditions. I really mean that.

FIRE CONDITION

Mr. **Alcock**. That is the worse fire condition, or potential fire conditions that I have seen in my 30 years, because it covers such a huge area. We are talking over 20 counties, and there is tremendous fuel loading over the whole area.

Senator **Hollings**. And you ought to have a request up here if you need it. We are talking about October 1, Mr. Chairman, for next years appropriations, and there is a lot of work to be done for the spring and the summer, and in August and September, when it dries up.

Well, inform the committee what you really need, and how fast. Thank you very much, Mr. Chairman.

TIMBER SALVAGE

Mr. **Robertson**. I might add, Mr. Chairman, that it was helpful for this committee last year to authorize the salvage sale funding for us to go ahead and do all the salvage work on the Francis Marion National Forest, and we are making very, very, good progress doing the salvaging; and that, in and of itself, is removing fuel out of the forests.

Hugo on the Francis Marion

The Hugo funding on the Francis Marion for fire needs are $700,000 in fiscal year 1990 and $1,500,000 in fiscal year 1991.

SALVAGE SALE PERSONNEL

Senator **Hollings**. But you have the only salvage sale personnel that can be found. They said when we get through with the Francis Marion, we will get to your tract, but I understand, and that is just a fact of life. You go ahead and continue doing your job.

Mr. **Alcock**. Yes, sir.

Mr. **Robertson**. Well, the Francis Marion National Forest has really quality saw timber, pine saw timber, and large, high quality trees.

Senator **Hollings**. Well, Mr. Eng, the chief forester down there in the Francis Marion, has asked for $24 million, and I want to make sure that his facts are broken down, or his figures are broken down, and whether we are responding to his request.

Mr. **Alcock**. Yes; we can confirm that.

Hugo on the Francis Marion

The total needs for Hugo funding on the Francis Marion are $15.6 million in fiscal year 1990 and $25.2 million in fiscal year 1991.

CHALLENGE COST SHARE

Senator **Hollings**. Thank you very much, Mr. Chairman.

Chairman **Byrd**. All right. Senator Cochran.

Senator **Cochran**. Mr. Chairman, thank you very much. Chief Robertson, I want to first of all commend you for the development of wildlife and fishery initiatives that you have recently undertaken, and the recreation initiatives that have gone along with those.

They have been very popular in my State, and very warmly received by the people of Mississippi. I hope that there is a budget request before the committee for funds to continue the Rise to the Future Program, or similar programs, that have led the way.

What do you think the budget request is, in terms of sufficient or adequate, to enable you to continue to bring those programs to the public?

Mr. ROBERTSON. We have $19 million in this budget for what we call the challenge cost-share money, and that is for recreation, fish and wildlife, and then I think there is about $500,000 for research.

And that compares to about $15 million last year, and so it is almost a $4 million increase; and we are getting on the average of about $1.75 of contributed funds from the private sector, or State and local governments, per Federal dollar. So, we are really stretching these dollars, and it is a good program, because people are really getting involved, and we feel good about it.

Senator COCHRAN. Well, I think the attention it is attracting through the U.S. Forest Service's initiatives in these areas is very healthy, in terms of overall support for what the Forest Service is trying to do.

Most of the land in our State is privately owned, but we do have a lot of forest land, and I was able to visit two of our national forests just this past winter, and talked with local officials, and State government officials about the management and use of these lands, and I just wanted to commend you for working together with these local agencies in trying to develop a way of managing that takes into account the interest for recreational use and wildlife habitat, and fisheries development in our State.

LAND EXCHANGE AUTHORITY

There is also a good deal of attention in our State that has been drawn to the issue of swapping public lands for private lands, and there has been a series of articles, for example, in the Jackson Clarion Ledger on this subject.

One article points out that since 1981, more than 23,000 private acres in Mississippi have been exchanged for 14,000 public acres. I am not making a judgment on whether that is good or bad, or too much, or too little, but I wonder though since the issue has come to the public's attention in this way, whether there are sufficient safeguards to ensure that the public's interest is served whenever the Forest Service approves a swap of land of this kind.

There has been a suggestion that some of the lands being swapped with the U.S. Forest Service is cut-over land, and that the people are getting in exchange land that they deem more valuable.

It is even pointed out that in some cases money has had to be paid to the U.S. Forest Service to equalize the value. What is the policy of the U.S. Forest Service on swapping of lands?

Mr. ROBERTSON. Well, first, it has to be of equal value; for what we get and what we give up, or we have to get more than what we are giving up. Second, we do appraisals by professionally certified appraisers, who go in and appraise the two tracts of land.

They go through the environmental NEPA process, and public involvement, so that people know what we are doing; and I think the controls are adequate, to make sure that we don't make a bad deal out of it.

CRITERIA FOR LAND SWAPS

Senator **Cochran**. Are there any swaps or exchanges of land made because of political pressures, or influence of the people involved? What criteria is used or safeguards are used to make sure that these are meritorious and have value to the public before they are approved?

Mr. **Robertson**. The land that we acquire has got to be some land that we want in order to complement our existing land that we have within the national forest. As you know, the land that we have in the national forests in Mississippi is land that we bought up in the 1930's, and there is a lot of private land intermingled with the Federal lands. So any land we acquire has to complement the land that we already must manage as part of the national forest land.

So, in many cases, we try to achieve more efficient management by consolidating them. We may have little isolated chunks of land that we try to trade for parcels of land inside our forest boundary that are surrounded by the lands we manage.

Senator **Cochran**. There is one issue that has come up recently, and that is a proposal that the Mississippi National Guard has submitted to the Secretary of the Army, for a swap of some land in the DeSoto National Forest from the U.S. Forest Service to the National Guard, or a lease arrangement, so that land could be used for military training.

This proposal has developed a very high profile in our State and a lot of people are taking sides on it, and expressing themselves very forcibly on one side or the other of that issue. Has the U.S. Forest Service analyzed that proposal at this point, and has a position been developed on this issue?

Mr. **Robertson**. No; we are going through the public involvement and environmental analysis now, and I would ask Regional Forester Alcock just what the status of that is.

Mr. **Alcock**. Senator Cochran, as you know, the Corps of Engineers has the lead in preparing an environmental statement. That statement was supposed to be completed this summer. The last I heard was that it was going to run several months late.

We are working with the corps and we are helping in every way that we can to move the environmental statement along, but at this point it is running behind time. As you have probably read in the papers, they have had several meetings around the State which have been very heavily attended, and there is a very divided opinion about this proposal.

Senator **Cochran**. Has the Forest Service developed a position yet, or are you waiting until the environmental assessment has been completed before you do?

Mr. **Robertson**. We are waiting for the environmental assessment.

Senator **Cochran**. As I understand the procedure, and is this correct, but somebody told me that before a final decision is even made by the Army on this as to what their position is, that this assessment has to be completed and that some negotiation or some decision made that involves or includes the Forest Service as a part of the proposal before it can go forward to higher authority, like the Secretary of Defense or somebody in that position, or the Congress for its approval. Is that correct?

Mr. LEONARD. Yes, sir; that is correct.

Mr. ROBERTSON. That is correct. Just last year we signed an agreement between the Secretary of Agriculture and the Secretary of Defense, basically laying out that approach, and that it would be a joint decisionmaking, and a joint involvement in making those recommendations.

Mr. LEONARD. This transfer would take place not under the land exchange authority, where we are required to get equal values, but rather simply under the authority for one government agency to transfer lands to another government agency.

The areas under discussion involve not only lands in Mississippi, but also some lands in Colorado as well, and lands that have substantial cultural resource values, but we are not attempting in that to come up with a value for value exchange until the transfer is authorized.

STONEVILLE RESEARCH

Senator COCHRAN. My final question, Mr. Chairman, is that there is some valuable research undertaken in our State, at Mississippi State University, and also at the Department of Agriculture facility at Stoneville, and I know that the budget request is down slightly for the work on the bottom land hardwoods research at the Stoneville Research Center, and that concerns me.

It seems to me that at a time when we are worried about bottom land hardwoods, and defining the numbers, that we should be doing more research to try to figure what to do about that, and how to protect those valuable resources. What is your reaction to that?

Mr. ROBERTSON. This budget represents a significant shift in our research program, and in order to take on some of the high priority initiatives like global change, and water quality and some of the other items, we have had to cut back a lot of what I call our base or foundation programs. A number of different research projects got caught up in that with the reduction, and the bottom wood and the hardwood was just one of those.

Senator COCHRAN. The facilities at Mississippi State as I understand it are in need of consolidation. There has been some discussion of putting under one roof the work that is being done there.

Can we expect the cooperation of the Forest Service in helping develop a plan jointly with Mississippi State University to achieve that result in the next fiscal year?

Dr. SESCO. Yes, Senator. We have three units at Stoneville, and if we can work out this grant that we are trying to work out with the University, the smallest of our three units there will be moving over, in addition, and we have had some discussions with the University about further sharing space if they in fact add another addition to that building. So, we have been working with the university.

MILITARY LAND EXCHANGE

Senator **COCHRAN**. I appreciate your responses to my questions. One just parting comment, and that is that the suggestion that everything would be even if you swapped some land in Mississippi for some land in Colorado does not strike me as a very healthy swap.

That is not going to benefit the people in Mississippi a whole lot, you know, when I go back and tell them, yes, we got a great deal. We just gave you all some Colorado land, and we will all board the bus tomorrow and go look at it. I think that is something that needs to be looked at very carefully before we get carried away with that.

Mr. **ROBERTSON**. Well, I agree with that, Senator Cochran. You know, where we get caught is when the military does need some land to do their training on, and it is a matter of using some existing Federal land, or going out and buying or leasing lands.

And so we have over the years tried to cooperate with the military in providing training, so that they don't get caught up in a lot of expensive land acquisition or leasing, but in this case, it would be affecting a lot of others.

Senator **COCHRAN**. My comments should not be misinterpreted. I am not opposed to cooperating with the military. We have a very important training facility in our State at Camp Shelby, and in other locations in Mississippi as well, and I don't want to jeopardize those facilities in any way whatsoever.

And so I am not suggesting that just because you can't find a good swap within the State of Mississippi that you should just consider the thing over. I am just guessing that a swap of land in Colorado does not appear on its face to benefit the people of Mississippi.

Mr. **ROBERTSON**. That is probably true, but the land in Colorado is surplus.

Mr. **LEONARD**. It is not a swap in the conventional sense of the word. It is simply two changes of management of the lands.

Senator **COCHRAN**. Thank you, Mr. Chairman.

Chairman **BYRD**. Senator Hatfield.

TIMBER CONTRACTS

Senator **HATFIELD**. Thank you, Mr. Chairman. Chief, would you give us a status of how much timber is under contract right now in region 6, and what was under contract a year ago on this date, and what might be considered as a possible figure for a year from now?

Mr. **ROBERTSON**. I have the figures here for the end of the last fiscal year. We had 7.1 billion board feet under contract in region 6, and that compared to 10 billion the year before. So we went down almost 3 billion board feet in 1989.

Senator **HATFIELD**. And what would you guess as a possible figure for a year from now?

Mr. **ROBERTSON**. If we are able to get the 7.7 billion board feet under section 318, I would hope that would not fall more than another one-half billion or so. Maybe down to 6.5 or so.

Mr. **LEONARD**. I think, Senator, that the harvest, or the actual harvest levels in region 6 are staying up close to 5 billion board feet. The 7.7 relates to about 3.8 per year, and so we will continue to go down about 1 billion, to 1.2 billion, per year.

Senator **Hatfield**. Per year?

Mr. **Leonard**. Yes; per year.

Senator **Hatfield**. Do you expect to have a mass number of mill closures in region 6 in the near future, or any estimates on that situation? Putting it in context, we have had about 100 in the last 10 years and a loss of about 10,000 in employment. What do you see this year?

Mr. **Robertson**. In 1990, or 1991?

Senator **Hatfield**. Next year.

Mr. **Robertson**. I think we will continue to see more closures, and even though this is over 1 year's timber supply, it is not evenly distributed among all the timber purchasers. So some are really up against it right now.

Senator **Hatfield**. So, you see these additional mill closures as being primarily amongst the small independent operators, or a broader base?

Mr. **Leonard**. It is going to be weighted against those that are dependent upon public timber.

Mr. **Robertson**. Which means the small outfits.

Senator **Hatfield**. Do you have any record, once these mills are closed, of the possibility or the odds of them reopening once they close due to a lack of timber supply?

Mr. **Robertson**. With the reduced timber supply, there are going to be some mills which pass out of existence due to the timber supply not being there.

Senator **Hatfield**. So, we can expect then that even under the best of conditions a continual decline in timber supply will affect the smaller mills more than the general industry. Is that your estimate?

Mr. **Robertson**. Yes, Senator.

Mr. **Leonard**. Very definitely.

JACK WARD THOMAS REPORT

Senator **Hatfield**. Chief, can you provide me today with an assessment of the impact the Jack Ward Thomas Report would have on employment or closings if it were implemented in its current form, economically, socially, direct or indirect as it relates to future timber receipts?

Mr. **Robertson**. Senator Hatfield, our preliminary analysis was that in Oregon and Washington that would probably reduce the timber sale program, or ASQ level, by about 700 million to 1 billion board feet.

We are trying to finalize those figures, and also our job loss projection is about 10 to 14,000, just the national forests. Those were our preliminary analyses, and we should have those finals by about May 1. So, another 10 days or so and we will have those for you.

Senator **Hatfield**. All right. Let's put that into the same language of apples and apples. If the Thomas Report then were implemented as it now stands, you are saying that we would see 2.5 billion board feet instead of about 3.8 billion board feet for fiscal year 1991. Is that about the right figure?

Mr. **Leonard**. Well, 2.5 to 2.7, or somewhere in that range.

Senator **Hatfield**. As you know, there have been very clear indications that the spotted owl is perhaps not the real target as much as it is to eliminate the cutting of any old growth. If we applied the habitat as established in the Thomas Report, it would bring that down to 2.5 to 2.7; and if we then incorporated the other major stands of old growth, then that would reduce it down to about how much, to what level? Would it be 2 billion, or maybe 1.8?

Mr. **Leonard**. We are really taking a very substantial part of the old growth beyond the Thomas Report, and so it would probably take it below the 2½ billion, but I am just not sure how much more below that it would be.

Senator **Hatfield**. Which got hit harder, Oregon or Washington, in this Thomas Report?

Mr. **Overbay**. Washington.

Mr. **Leonard**. Yes, Washington.

Senator **Hatfield**. In part, is that because Oregon had already set aside——

Mr. **Leonard**. That contributed, but probably the major impact was the scientific committee's assessment that the habitat needs of the owl were more critical in Washington, that its home range was larger, and that the amount of cutting that is taking place in and around the Puget Sound area has ended up essentially isolating the population in the Olympic Peninsula. This has the effect of highly fragmenting it, and therefore proportionally they have had to have larger habitat conservation areas closer together.

Senator **Hatfield**. I understand about 40 percent higher in Oregon if we had not——

Mr. **Leonard**. They formed a core around which you could put the habitat conservation area.

Senator **Hatfield**. Now, tell me what you are going to do with this report from my colleagues? This may sound like a very regional and parochial concern, but I believe that most everyone recognizes the credibility and the credentials of this committee, and certainly there is no way that I am going to challenge that.

We have only had a scientific evaluation in this committee for it, and it is only advisory, but what do you plan to do with it in terms of your record of deciding your final supplemental spotted owl EIS, or your reassessment of the timber and forest values, and our reprogramming activities? What are you going to do with this?

SPOTTED OWL IMPACT

Mr. **Robertson**. The first job as you mentioned earlier is to analyze the impacts. In other words, how much will it reduce our Timber Sale Program, and what are the social and economic effects of that. We will have that done around May 1.

Then we will go from there in terms of looking at the report and making or revising our record of decision on the spotted owl, or spotted owl EIS.

I would hope about July 1 that we could issue that draft decision, but a kind of wild card here is what the Fish and Wildlife Service does on June 23 and whether or not the spotted owl is listed as threatened or endangered.

But we will try and incorporate that into our decision by July 1 on a draft, and send that out for public review and comment for some 30 to 45 days. Then around August or September, we will make the final decision revising our spotted owl plan.

And then from that point we will have to revamp our forest plans in line with that decision.

Senator **Hatfield**. Will this impact on fiscal year 1990?

Mr. **Robertson**. In fiscal year 1990, section 318 applies. What the advisory or the scientific committee suggested was that if we have some critical sales under 318 inside these habitat areas that are going to significantly affect the spotted owl population, we ought to take a look at that. We plan to do that.

Senator **Hatfield**. So, there can be an impact on that in fiscal year 1990?

Mr. **Robertson**. Yes; there could be.

Senator **Hatfield**. What are you going to recommend to this committee, and what do you expect of the committee? Do you have any range of ideas for fiscal year 1991?

Mr. **Robertson**. I would hope that we could give to the committee soon since we will have our analysis done by May 1. I would hope within a couple of weeks we could tell you what our capabilities are for fiscal year 1991, and it would be a downward assessment from the 4.4 billion that is now in this legislation.

Senator **Hatfield**. Mr. Chairman, I pursue this only on the basis that we might be facing that very quick deadline. For many years we have had to come in and keep this whole thing put together in the appropriations process, and I don't think that is a right way to handle that.

I don't believe that either the Congress should be trying to administer the Forests, nor do I think that the courts are competent to administer the forests. Yet we have been having to rely on one or the other until a new forest plan was in place, which gives us a professional basis upon which we can pursue our activities in the Congress.

Do you see that happening for fiscal year 1991, or do you see the possibility of another short term attempt to bridge this over until the time that we can get a solid base of professional and scientific data that can be the foundation upon the management of resources?

Mr. **Robertson**. By September 30, I will have a revised spotted owl decision.

Senator **Hatfield**. By September 30?

Mr. **Robertson**. Yes, sir.

Senator **Hatfield**. That's at the end of the fiscal year?

Mr. **Robertson**. Yes; and we can proceed on that basis in the managing of the forests in the future, provided that we do not get hauled back into court and get stopped again. At least administratively we can see our way through this, unless we get stopped through the courts.

Mr. **Overbay**. Senator Hatfield, I think that is a key point, because the court case that led to section 318 has not been rescinded, and——

Senator **Hatfield**. That's right.

Mr. OVERBAY. And it is still there, and depending upon whatever decision we make, that will be challenged again in court.

Mr. LEONARD. And just to amplify on that a little further. We think that the scientific committee and Congress and the other agencies have put out a very credible report, and if we adopted that for the strategy for maintaining the viability of the spotted owl, we could probably successfully defend that in court.

But the problem, of course, is that the whole issue of ancient forests and what not goes beyond the spotted owl, and so simply finding a scientifically credible way of dealing with the spotted owl has not been——

Senator HATFIELD. That's right.

Mr. LEONARD. And I think it is worthy of noting, Senator Hatfield, that you characterized this as a parochial or a Pacific Northwest issue. It is, but it also goes much beyond that. We are talking about a volume of timber that is going to have major effects if this volume of timber is removed from the market. It is going to affect the price of timber all over the country.

Senator HATFIELD. I have seen studies of 20- to 25-percent increase.

Mr. LEONARD. Yes; and it affects the cost of housing.

Senator HATFIELD. And, of course, we are having an increase in the homeless now, and families with children, and not just what some people think as a homeless street person who is an alcoholic.

I am glad that you mentioned the fact that this is not evenly distributed, as we have over 70 communities in our State that are dependent upon a one or two mill economy. Those are generally small mills which are dependent upon public timber.

So the reduction of that supply becomes a matter of the elimination of a community, and we have up to 40 percent of some of our school budgets relying upon timber receipts. If you zap that by 30 or 40 percent, then we have an educational problem. And the people have not shown any propensity to raise their property taxes to offset the losses in our revenues from timber.

So I only want to say that we can make adjustments, and I think that the American people have done this so often. However, if we are going to make this as of yesterday, or as of this moment, or as of tomorrow, or this fiscal year, we have no time for legislation to move into an educational refinancing act.

We don't have time for people to retrain for other jobs, and I am fearful that an awful lot of thinking has become polarized; either you are going to choose a human being or an owl. That should not be the case. I think we can live with these endangered species, and accommodate them.

I certainly am not going to suggest that we repeal the Endangered Species Act, but by the same token I still represent people who are going to be deeply impacted. Those are human beings to whom I have to give due consideration, as well as to upholding my interest in environmental values.

Do you think that if the owl is listed by the Fish and Wildlife that there will be a stop, a cessation, of the harvesting until a plan for recovery is implemented?

Mr. ROBERTSON. It does trigger consultation on every action that we take. The Fish and Wildlife Service has a number of options, one of which could be to basically accept the Thomas Report as a recovery plan.

So, if that action were to be taken as the recovery plan for Fish and Wildlife, then it would provide us some opportunity to continue to sell outside of those habitat conservation areas.

But it does require consultation on every action, every timber sale, and we would have to abide by the results of the Fish and Wildlife's opinion.

Senator HATFIELD. And you have the Multiple Use Act, and you have NEPA, and we have all of these other laws governing forests as well.

Mr. LEONARD. The real critical thing it seems to me, Senator Hatfield, is that if we are going to make an adjustment of this magnitude in the Pacific Northwest, somehow or another we have to find a way to make that lower sale level a program that we can maintain as a reliable and dependable one.

Senator HATFIELD. That's why I think that we are seeking a moderate position here rather than an extreme on either side; a moderate position, a balanced position. It is going to be easier to achieve that initially, and I think easier to sustain over a period of time.

You swing the pendulum from one extreme, with about 10 percent of radicals on this side, and over here about 10 percent of radicals on the other side. There are some who feel that every tree ought to be a candidate for a chain saw; and we have some others that think that no tree—old growth, second growth, cut over, any tree—should be a candidate for a chain saw.

Somehow we have to find that policy that is going to incorporate both of those values of economic and environmental needs into a public policy. That is where I am coming from.

Mr. LEONARD. The Chief has expressed that, I think, in saying that he is faced with holding a barbell out there with interest groups heavily weighted out to those extremes, and it does not take very much weight on either side before you lose control.

Senator HATFIELD. Mr. Chairman, I have some other questions I would like to submit for the record, and I thank you for your patience.

Chairman BYRD. Thank you, Senator Hatfield, and your questions may be submitted, and the Chief has indicated that they will be responded to in 3 weeks, I believe. Senator McClure.

Senator MCCLURE. Thank you very much, Mr. Chairman. I yielded to my colleagues because I do have a number of questions, and I anticipate that I will take longer than they did, not because they had less interest at all, but because perhaps I have a little broader responsibility on this committee than they do.

There are a couple of issues that I want to explore at some length. I might say, Senator Hatfield, that I sympathize with you with respect to the spotted owl controversy, but those who have said that it isn't just for the State of Washington are right.

We are beginning to see the impact upon housing costs, lumber costs have already risen, they are talking about affordable housing as well as the opportunity for young families to get into affordable housing and their first homes, and those plans have already been impacted negatively.

That coupled with other issues in the timber planning process and the issue of timber exports from the United States, has exacerbated the regional problem, which does have national implications.

It is not just a problem for you, and it is not just a problem for the Northwest, although perhaps some would agree that the impact is slightly different.

BELOW-COST SALES

I want to explore for the moment the issue of below-cost sales. The President's fiscal year 1991 budget proposes a test to evaluate the implications of phasing out certain below-cost commercial timber sales on national forests and to determine whether the loss in local economic activity and payments to counties can be offset through expansion of recreation.

The test will evaluate the effects of 12 national forests under some below-cost guidelines established in the budget. If I understand the proposal correctly, approximately $5 million will be deleted from the timber programs, and $10 million will be added to recreation and related trails and wildlife programs in fiscal year 1991.

The additional $10 million is designed to expand recreation activities for these nine test forests to generate offsetting economic activities to replace the 525 jobs which it is anticipated will be lost, as well as the associated income generated and revenue shared with the counties.

RECREATION USER FEES

The budget also proposes special legislative authority to increase recreation user fees on those test national forests. Have I summarized that proposal relatively accurately?

Mr. ROBERTSON. Yes, sir.

Senator MCCLURE. It is not difficult—well, let me restate that. It is difficult not to be cynical about this proposal. You are proposing to spend more on recreation than you save on timber, and then you propose a new tax in an effort to provide jobs. This is clearly an inside the beltway solution. Did the Forest Service initiate this proposal?

Mr. ROBERTSON. No.

Senator MCCLURE. Why would a person who intends to go to a forest for recreational activities choose a forest which he or she will be taxed to use when there is another nearby forest with similar opportunities and without a tax?

Mr. ROBERTSON. We are hopeful that with this additional investment of $10 million in new pilot forests that we would have a higher quality recreation experience with the investments that are made on those forests.

Senator MCCLURE. What if the revenues generated from the tax on recreational activities do not cover the costs? Would you eliminate the below-cost recreation?

Mr. ROBERTSON. I doubt it.

BELOW-COST TIMBER SALES

Senator McClure. Of the 525 people whom you expect to lose their jobs as a result of this test, how many will be Forest Service personnel?

Mr. Robertson. Not very many, because as you point out, we will be just shifting our workload from one program to another. We may have to move some people around to get the job skills.

Senator McClure. The job loss will be primarily in the private sector?

Mr. Robertson. Yes.

Senator McClure. And of the $10 million spent, how much of that would go to hire additional personnel?

Mr. Robertson. Very little. Most of it would be on the ground work to improve our recreational facilities.

Senator McClure. Is the test contingent upon the enactment of the new fees?

Mr. Robertson. That is part of it, but you could go with the other two components without the fees.

Senator McClure. And then it would just be a net cost to the Treasury?

Mr. Robertson. Yes.

Senator McClure. In response to a question that was asked on why the Forest Service is studying the elimination of so-called below-cost sales, the Forest Service's response was, and I quote,

> Many people in the public, the Forest Service, and Congress, believe that timber from the National Forests should not be sold for less than it costs the Government to harvest the timber.

There was more to that statement, but that is just an excerpt from the statement. Did you discuss this proposal with the people that you anticipate will lose their jobs?

Mr. Robertson. Not before it was announced in the budget. This came forward as a part of the budget process, which is confidential within the executive branch until the President makes a decision. After the budget came out, we did have some discussions at the local level.

Senator McClure. And the people who lost or will lose their jobs under the proposal were then given an opportunity to comment?

Mr. Robertson. We had some discussions on it with the local people and I assume that some of those people who would lose their jobs spoke up, and I know they did in the case of the Beaverhead and a few other forests.

Senator McClure. When the all resource accounting system is complete, is it your intent to eliminate other multiple use activities if they are below-cost, and if many in the public, the Forest Service, and Congress feel that those resources should not be provided if the costs exceed the revenues?

Mr. Robertson. No; that is not our intent, although I do——

Senator McClure. Just on the timber side: if it is below-cost then it will be terminated, but if other activities are below-cost they will be continued?

Mr. Robertson. Well, I think that our resource accounting will raise some questions that need to be asked, but I wouldn't jump to the conclusion that just because it is below-cost that it ought to be eliminated.

ALL RESOURCE ACCOUNTING SYSTEM

Senator McClure. Will the all resource accounting system be similar to the TSPIRS system with the three separate reports, one of which would be a statement of receipts and expenditures?

Mr. Robertson. Yes; we are still working out the details, but we would be following that concept.

Senator McClure. Obviously, the so-called below-cost issue has become a political issue, and I don't think you created that, and I don't think that you intended to create that as a political issue, but it has been done by others.

GAO APPROACH

And unfortunately, I don't think that the Forest Service has done a very good job of dealing with the issue. In fact, when you recently made the decision in selecting the 10 forests for these tests, you adopted the GAO's definition of being profitable. Am I correct?

Mr. Robertson. We adopted report 1 out of the cash-flow report.

Senator McClure. Out of three, and that is essentially the GAO's definition of being profitable; is it not?

Mr. Robertson. Yes.

Senator McClure. So, in effect, you applied the GAO's methodology to determine whether or not it was below cost?

Mr. Robertson. Yes.

Senator McClure. Do you agree with GAO's approach in determining what is and what is not a below-cost sale?

Mr. Robertson. I think you have to look at all three reports together and look at the conclusions in the three reports and make a judgment. By looking at just any one of the three alone, you are going to get a skewed look at things.

Senator McClure. Well, is that in your opinion what would result, a skewed look?

Mr. Robertson. That was the first cut at the sales, whether it was below-cost or above-cost based on report 1; and then we have some guidelines that go beyond that, and that even some below-cost sales can be put back in for good reasons.

Senator McClure. I will not belabor the subject, but I don't agree at all with the idea that the 25 percent of gross revenues is dispersed to counties as a cost.

Mr. Robertson. We did not include that cost.

Senator McClure. That was not included because GAO did it. Did they not?

Mr. Robertson. We have two line items, you know, and before payment to the States and after payment to the States.

Senator McClure. But 25 percent of revenues is counted as a cost rather than a revenue. Is that correct?

Mr. Robertson. Yes.

Senator McClure. And that is called creative accounting in some circles.

Mr. ROBERTSON. That involved considerable discussion between us and the GAO, and the conclusion was that we are to show it both ways.

Senator McCLURE. It is shown both ways, but nearly all of the publicity that I have seen in the papers across this country shows it only one way. So while you may have been honest in your development of the figures, those who have used the figures have been somewhat more biased in their presentation of the data that you provided.

Mr. ROBERTSON. Senator McClure, I find that people will pick little pieces of information here and there, depending upon what point they want to make.

BEAVERHEAD NATIONAL FOREST

Senator McCLURE. Although the Beaverhead National Forest is not in my State, I want to use it as an example because it was one of the 10 forests that you selected as a part of this grand experiment.

Was the final forest plan for the Beaverhead in place prior to the time of your decision?

Mr. ROBERTSON. Yes, sir.

Senator McCLURE. How is it then that you were able to effectively gut the timber sale portion of that plan, putting 300 people out of work, shutting down at least one saw mill, and slashing U.S. Treasury receipts by $250 million, without complying with the National Environmental Policy Act requirement of full public involvement when making such a major change in a decision originally made in full compliance with NEPA?

Mr. ROBERTSON. Well, this decision was made as a part of the budget process.

Senator McCLURE. Well, doesn't the budget have to comply with NEPA?

Mr. ROBERTSON. No; we don't prepare EIS's on our budget, although——

Senator McCLURE. You are not talking about a budget now. You are talking about actual activities in the field. How much time and money was spent developing the plan on the Beaverhead?

Mr. ROBERTSON. Probably $2 million.

Senator McCLURE. Over how long a period of time?

Mr. ROBERTSON. Ten years.

Senator McCLURE. Ten years, $2 million, and all that public input and discussion. And when it is all done, OMB, responding to GAO, says let's forget all of that and come up with a brand new plan for the Beaverhead?

Mr. ROBERTSON. That is part of the problem we have run into on this task.

GAO

Senator McCLURE. I have received some criticism in the press for Congress meddling in your planning process, and GAO snaps their fingers, and you just throw a plan out that was adopted. Isn't that the effect of what has happened?

Mr. ROBERTSON. I would not give GAO credit for that. I mean, they did work with us on the reports and what is below-cost, but GAO was not the one that was involved in deciding.

Senator McCLURE. OK. OMB doesn't have to comply with it either, granted. Congress does not have to comply with it, granted, but you do?

Mr. ROBERTSON. Yes, sir.

Senator McCLURE. And you didn't?

Mr. ROBERTSON. There is some flexibility in implementing these plans over time, but if this task was to continue 2 or 3 years, I think that we are in a situation that we would have to revise our forest plan.

TIMBER HARVEST

Senator McCLURE. Well, the forest plan contemplates a certain level of timber harvest each year, does it not?

Mr. ROBERTSON. There is an allowable sale quantity which is how much we can put on the market itself.

Senator McCLURE. No; it is not how much you can, but how much you are targeted to do on your balanced plan. Isn't that correct? You have a whole lot of elements of a forest plan, one of which is timber harvest.

Mr. ROBERTSON. And the plan says that is how much we can harvest, and still meet all of our requirements.

Senator McCLURE. This is how much of everything else you do, and can still meet the timber harvest?

Mr. ROBERTSON. Yes.

Senator McCLURE. Timber harvest isn't the only discretionary part of it. You cannot increase or decrease the timber harvest any more than you can decrease or increase other elements of that plan. Isn't that correct?

Mr. ROBERTSON. Yes, sir.

Senator McCLURE. To make major revisions in that plan, you have to revise the plan under NEPA?

Mr. ROBERTSON. Yes; and you just can't very well go in there and pick out one little piece, and make a submittal.

BEAVERHEAD NATIONAL FOREST

Senator McCLURE. Now, you have on the Beaverhead and other forests, thrown away the forest plans and applied an entirely different set of balances in that forest. Am I not correct?

Mr. ROBERTSON. Basically that is the proposal; yes, sir.

Senator McCLURE. Let me hand you a sheet of paper. Please examine this information that I have handed you. I have handed you a page that has some figures with respect to the Beaverhead, and all of these figures came from either Forest Service documents or from conversations between my staff and the Forest Service staff.

In examining this information, it appears to me that you have used the GAO and the environmental community's definition of below-cost sales to justify shifting funds out of timber programs and into recreation programs. Is that assumption correct?

Mr. ROBERTSON. That is what happened, yes.

Senator McClure. And, in fact, you actually added an additional $581,000 on top of that, if my figures in the right-hand column of the budget table are correct?

Mr. Robertson. Yes, sir.

Senator McClure. Now, look at the second page. To come up with the increase in revenues from recreation programs that you used in your budget analysis, it appears that legislation will be needed to allow you to charge user fees at campgrounds where they are not currently required. Is that a correct assumption?

Mr. Robertson. Yes, sir.

FOREST SERVICE EMPLOYMENT LOSS

Senator McClure. Well, let me try to recap the results of this experiment with the jobs of 300 people on the Beaverhead National Forest. By the way, how many Forest Service jobs are going to be lost as a result of the experiment, if any? Do you know?

Mr. Robertson. Very few. There may be some shifting of people around, but our budget as you noticed does not go down. It goes up.

Senator McClure. After transferring 65 percent of the funds originally budgeted for timber sale activities, and that is $753,000, into recreation programs and adding another $490,000 to the pot, it appears that the net result is a loss of 300 jobs, a decrease in the lieu payments for the counties affected of approximately $70,000, a loss of $243,000 to the Federal Treasury, plus the cost to the taxpayers of the additional $490,000 you added. Is that correct so far?

Mr. Robertson. I think so.

Senator McClure. In fact, without authorizing legislation to increase the campground user fees, the Treasury would be out an additional $19,000. Is that right?

Mr. Robertson. You mean that we increased user fees by $19,000?

Senator McClure. Yes.

Mr. Robertson. Yes.

Senator McClure. So, in summary, as a result of saving money by doing away with the so-called below-cost sales, you have really just cost the taxpayers of the country some $750,000, plus the loss of income taxes that would have been paid by these well-paid 300 workers who are now going to be in the unemployment line.

Add to that figure the loss of corporate and other taxes directly related to the closing of the mill or mills affected, and this experiment is actually going to cost us all $1 million, more or less. Is that approximately correct? And that is just 1 national forest out of 155.

I very firmly believe that you are in violation of NEPA. I cannot understand how the forest planning process in which you and all of your professionals along with all of this public input over all of these years, and the expenditure of all of this money, have created a forest management plan with all of the tradeoffs that are involved—and there are a lot of them. At the end of that process, for political reasons, a decision is made to throw that plan out. That strikes me as being the height of ridiculousness. I have been subjected to criticism from some levels for working with you to try to bring about some modest changes within the forest planning process, but that is considered political interference.

And yet, OMB decides to interfere with the process, and that is good for the environment. It is terrible public policymaking. I can't imagine that you are very proud of it, and I can't imagine that very many people out in the field who have worked so hard to develop these plans can be very proud of the results either.

You know, I really feel sorry for the professionals in the Forest Service today who break their necks trying to do a good job. They come up with what they think is the best product, and somebody in Washington, DC, says to junk it all and start over on an entirely new premise without any direction from the legislative body of government.

I am not talking to you, Chief, but I am talking to OMB. They ought to be ashamed of themselves, and they ought to be called to account. I said this many years ago, and I will say it again right now. If I had my druthers, I would abolish OMB, lock, stock, and barrel, and fire every last one of them.

The President has to have an administrative body like OMB, but they are the tail that is wagging the dog today. Laws don't mean anything, and administrative direction doesn't mean anything, and congressional direction means nothing. It is only a minor impediment.

All of the professional judgments of the best people in the management fields mean nothing, and some midlevel bureaucrat from OMB can make up his or her mind about what is the appropriate kind of resource management and snap their fingers, and everything else is irrelevant.

The only fault I find with you is that you didn't resign rather than take it. I know that is pretty difficult, to ask somebody at the peak of his career and just before retirement—and I am not saying that you are about to retire, but [laughter].

But you have——

Mr. ROBERTSON. There have been others who suggested that. [Laughter.]

Senator McCLURE. I know that, but it just isn't the Beaverhead. There are others. People who spent months negotiating these plans with all kinds of balances; however, now the integrity of the Forest Service has been compromised by this so-called experiment or test.

I would bet, and I don't know the answer to this question except that I think that I do, that a below-cost test was not included in the draft or final of any of the forest plans in these forests, was it?

Mr. ROBERTSON. No.

FOREST SERVICE BUDGET

Senator McCLURE. Let me shift just a moment to another issue, and that is the balance in the budget. I am not talking about whether you got a below-cost or a cash-balance, but I am talking about the balance between the different activities.

How much attention has been focused on the argument that the Forest Service budget is unbalanced, that too much of it is spent on timber programs when compared to other programs? Do you really agree with the press and environment organizations that it really is out of balance?

Mr. **Robertson**. I have not described it as being out of balance. I have described it as needing some rounding out, and we are making good progress on that. In fact, you have been very helpful, you and the chairman, to help us do that over the last 2 or 3 years.

I was very concerned that the Fish and Wildlife, or recreation, soil and water, and range management programs were not up to the level that we needed, but I did not see that as a shift from timber to these other programs. I saw it as a rounding out of our program.

Senator **McClure**. Well, Chief, as you know from our own conversations as well as past activities for this committee, I believe very strongly in what you just summarized; however, we may not have put enough resources into some of these other activities, and we should increase the funding for those activities. I have attempted to do that in recent years, and in particular to emphasize that.

Mr. **Robertson**. I just wanted to say, Senator McClure, that we in the Forest Service very much appreciate your efforts in that regard, and you have made a big difference in our budget in these programs. We appreciate that.

Senator **McClure**. Well, I thank you for the statement. I want to also just say that as you ended your prior statements, it was not intended to be a net result of decreasing timber activities and transferring the money into other activities. It was intended to be an addition to your budget to round out the activities in a slightly different way.

I would like for you to provide for the record, if you don't have it on the tip of your tongue, the percentage of your budget allocated to four different categories. One is timber roads, the second is wildlife, the third is fisheries, and the fourth is recreation. Do you have that available right now, or would you like——

Mr. **Robertson**. On a percentage basis?

Senator **McClure**. Yes.

Mr. **Robertson**. We will have to do some calculations, but we have all the data.

Senator **McClure**. All right. If you would do that please, and if you would also give approximately how much total revenues you have received, broken down into the same four categories.

Mr. **Robertson**. I can tell you that our revenues are about 80 percent of timber, with minerals being second.

Senator **McClure**. How much of the total road use on National Forest lands is for purposes other than timber? Now, I am talking about actual use, and not the allocation in your budget.

Mr. **Robertson**. The majority of the use is for other than timber. Basically what happens is that timber construction is on most of these roads, and those are the first users of it. Then, after the timber sales are made, that is when you get all the other kinds of use.

And, in fact, we did a study not long ago, and looked at some timber roads that had been built by timber, and then what the subsequent use of it was, and it is something like 75 percent for public use.

Senator **McClure**. Seventy-five percent is for use other than timber harvest management?

Mr. **Robertson**. Yes; I just now found the information. Some of these roads you may know about. The Sage-End Road, on the Boise National Forest, built by timber, and 5 years later timber use is 25 percent, or 26 percent and the rest is public.

Another example, Payette National Forest, your home national forest, on Mancreek Road, again built for timber, and now timber haul is about 37 percent.

Senator **McClure**. And let me state as a matter of personal experience that I think that is a conservative figure. If you look at the amount of recreational use on that road, it is a major access from the Reese River drainage to the Snake River side, and there are a lot of grouse hunters and chucker hunters that you probably don't know about.

Mr. **Robertson**. This study was about 3 or 4 years old.

ROAD MAINTENANCE

Senator **McClure**. Is the nontimber use of roads funded separately?

Mr. **Robertson**. Are you talking about the maintenance of the roads?

Senator **McClure**. Yes.

Mr. **Robertson**. Timber purchasers provide about 50 percent of the maintenance of our road system, and the other 50 percent is appropriated dollars.

Senator **McClure**. So about one-half of the maintenance comes from timber funds, and one-half of it comes from appropriated money, even though the use is probably 75 to 80 percent nontimber?

Mr. **Robertson**. Yes; and that is based on the number of people now.

Senator **McClure**. Yes.

Mr. **Robertson**. There is more required maintenance for a log truck than it does for a pickup.

Senator **McClure**. I would assume that much of the recreational use of the road is by hunters and fishermen. Is that correct?

Mr. **Robertson**. Senator, the No. 1 use under recreation use of the National Forests is people just out driving for pleasure, and just seeing the country.

Senator **McClure**. Do you allow for anything in your budget that is directly attributable to hunting and fishing for road maintenance?

Mr. **Robertson**. Well, that is all under our road maintenance item in the budget.

Senator **McClure**. So you pay for that out of the general fund. However, when you are looking at how much of your budget is spent for fishing and wildlife, you don't separately report that maintenance fund, even though a high percentage of the road use is for hunting and fishing?

Mr. **Leonard**. When we get to the TSPIRS system, presumably we will split the road maintenance budget between the——

Senator **McClure**. Well, I just wanted to make two points here. The reason that I ask these questions is because if we cut the funding for forest roads, in the long term the forest user groups that will be affected the most will be the recreational users. Right?

Mr. **Leonard**. That is correct.

Senator **McClure**. Because they have the most use of them after they are built. The second point is that in this term of budgetary balance, although there is hunting and fishing and recreational use for the roads, it doesn't show up as a hunting, fishing, or recreational budget item. Is that correct?

Mr. **Robertson**. That is right. It shows up as a road maintenance item.

RECREATION USE

Senator **McClure**. Which is not broken out separately as a hunting, fishing, or recreation item?

Mr. **Robertson**. That is true.

Senator **McClure**. Are there any Federal agencies other than the Forest Service with responsibility for the sale of timber from forest lands?

Mr. **Robertson**. The Bureau of Land Management.

Senator **McClure**. On Forest lands—just on U.S. Forest Service lands?

Mr. **Robertson**. No.

Senator **McClure**. No; OK, so you are the sole agency that has the responsibility for timber sales on National Forest lands?

Mr. **Robertson**. Yes, sir.

Senator **McClure**. Are there any other Federal agencies that have any responsibility for wildlife on Forest Service lands?

Mr. **Robertson**. Yes, sir; in the case of Fish and Wildlife, we work with fish and game departments in each State, and so we manage the habitat and they manage the game.

Mr. **Leonard**. The Fish and Wildlife Service has the responsibility for certain of the migratory birds, and the endangered species——

Senator **McClure**. And for fisheries on National Forest Service lands?

Mr. **Leonard**. Yes, sir.

Senator **McClure**. And recreation?

Mr. **Leonard**. Yes, sir.

Senator **McClure**. An obvious reason for my question is that a few years ago I asked the Congressional Research Service to provide me with a rough estimate of how many Federal agencies other than the Forest Service had at least some budget responsibility for fisheries directly dependent upon the management of the national forest lands.

The result was informative, and to some it would be surprising. In fact, as I recall, there were about 15 agencies who spend about $2 billion annually to protect and enhance habitat, and to enforce laws protecting fisheries that are either on, or dependent on, national forests.

FISH AND WILDLIFE

Mr. **Robertson**. I can give you some idea of the fish and wildlife resources of the National Forest System. About 50 percent of the cold water fisheries in the United States are in the national forests, and about 50 percent of the big game animals spend at least part of their lives on national forests. For some species like elk, it is 80 percent. So, we are involved in a very big way with fish and wildlife.

Senator McClure. You certainly are a very important business for all Americans as well as for those of us who live with national forests. You are an incredibly important part of the quality of life of Idahoans, who continually brag about the quality of the life, and I think that we have a right to because of the kind of management that you have on Forest Service lands.

NATIONAL FOREST SERVICE LANDS

And the values and opportunities that we have, not just to cut timber, make up the quality of life that is so important to us.

The only reason to take this time is that there seems to be a general perception among the public that if it is not in your budget, then we are spending too much money on timber, and too little on everything else.

We are spending probably $2 billion a year through a whole lot of other agencies with respect to some part of the multiuse management that you do on these National Forest Service lands.

I think that it is important for us to try and get into perspective for the American public the idea that it isn't all just timber cutting out there. There is a host of agencies that are involved in managing all of those resources.

And while you have the overall umbrella responsibility, there are a lot of other individual parts to the management that are felt and administered by other agencies and funded through other agencies.

So, the figure is not nearly as unbalanced as it would appear if you look at the Forest Service budget alone. Now, having said that, I will repeat what you and I both said earlier: that we are still trying to get the Forest Service budget increased in those other aspects of public land management, and I support that.

But I don't want to support it, and I do not support it, and I vigorously oppose the idea that that is a net dollar exercise taken away from timber activities and added to the other activities. That is not what it is all about.

Mr. Chairman, I am not going to ask all of these questions.

Chairman Byrd. All right.

BUDGET INCREASES

Senator McClure. No matter how hard we work, the funding level identified in the Forest Service plan seems to increase as fast as the budget, and even faster in some programs. For instance, the fiscal year 1990 budget requested $1.375 billion, and we funded 66 percent of the plan.

For fiscal year 1990, the Interior appropriations bill provided $1.6 billion, and funded 77 percent of the plan. The plan level, however, increased from $2.1 billion in fiscal year 1990 to $2.3 billion in 1991.

It should be noted that the increase in the planning level is in noncommodity programs. The timber program, based on an annual average ASQ, remains stagnant. Regions have similar problems.

WILDLIFE AND FISH HABITAT MANAGEMENT

For instance, the plan level for the wildlife and fish habitat programs in region 1 is $8 million in fiscal year 1989. The plan level for the same program increases to $15 million in fiscal year 1991.

And I support that increase. I would point out that these are noncommodity increases in management for one region. Is that correct?

Mr. ROBERTSON. Yes, sir.

Senator McCLURE. The fiscal year 1991 budget appears to fund a greater percentage of the noncommodity programs than in previous budgets. For instance, the total amount requested for the Wildlife and Fish Habitat Management Program moved from 53 percent in the fiscal year 1990 budget to 60 percent in the fiscal year 1991 budget. Again, I applaud you for that, and I support that.

It would be unproductive for this committee to argue with the Forest Service on how the plans were put together. Instead, we should seek creative funding opportunities so all regions and all programs are fully funded.

TIMBER RECEIPTS

Last year, during consideration of the fiscal year 1990 Interior bill, I proposed to fund the plans by providing a 10-percent bonus from timber receipts for a variety of programs only if that forest met its annual ASQ.

Unfortunately, the environmental community and the House of Representatives determined that funding the plans was not a priority and the proposal was ultimately dropped. I regret that. It was not done to extenuate the timber side or the harvest side of the budget. It was a recognition of what I think we have run into over the years up here.

People wonder why the timber side gets funded and the other side does not. The timber side provides money to the Treasury. If you harvest trees, you get money back. If you take the other activity, you don't get money back and that is an easy net sum for us to look at when we are looking at the bottom line of our allocation under the 302(b) process.

It is an easy thing for OMB to look at in trying to determine how much money you should be allocated and what is the net revenue. If an activity costs money, there is less reason to put money into it. But, if you are bringing more revenue in, it is easier for us to apply more money for the noncommodity uses on the same forests to produce that flow of revenues.

How many forests are currently meeting their annual average ASQ?

Mr. ROBERTSON. I think it is about 30.

Senator McCLURE. Out of?

Mr. ROBERTSON. 123.

PIPELINE

Senator McCLURE. If there were adequate pipeline volume, how close would this proposal come to funding the plans?

Mr. ROBERTSON. Timber sales were financed at about 87 percent in this budget, and it is about 85 percent of what we would call an ASQ, plus the nonchargeable materials. So, this budget is relatively balanced, assuming the pipeline was normal.

But because the pipeline is not normal, we are going to drop down to about 8.5 billion board feet that will be sustained over time with this budget.

Senator McCLURE. So, you will drop down for a variety of reasons, and revenues will drop unless stumpages get very high indeed. Is that correct?

Mr. ROBERTSON. Yes, sir.

Senator McCLURE. And that revenue payable to the Treasury will decline?

Mr. ROBERTSON. Yes, sir.

TIMBER PROGRAM

Senator McCLURE. Mr. Chairman, I will take time only for a couple of other things, but I think there are several items that need to be explored publicly rather than privately.

Many forest supervisors from the West have expressed concern that the timber program is out of balance with other resource needs. The funding history indicates that the wildlife and fisheries program has increased 157 percent; $33 million in fiscal year 1982 to a request of $85 million in fiscal year 1991.

And the timber program has increased 25 percent; $198 million in fiscal year 1982 to a request of $248 million in fiscal year 1991.

I want to continue working to see that the funding for wildlife and fisheries improves, but not at the expense of the timber program. Why do more and more of your supervisors seem to want to bring down timber programs in order to fund the noncommodity programs?

Mr. ROBERTSON. Well, Senator McClure, we have gone through the forest planning process in developing a 10-year program, and we have worked with the local people. Those forest plans are coming out of that process with a different amount than previous budgets or previous plans.

And, again, it is not so much a shift as it is as we discussed earlier about it being a rounding out. Our supervisors are just now facing local publics out there who have high expectations that we will manage these forests according to those forest plans, not only for timber but for these other resources as well.

And so I do not see it so much as a shift as I do a rounding out concept.

Senator McCLURE. Well, I agree with you, but apparently your supervisors in region 1 don't. That is the reason why I discussed it here openly, because they chose not to discuss it with you, but to write an open letter. I thought this was a unique way of getting your attention, if that is all they wanted to do.

They recently wrote you a letter in which they attempted to explain many of their frustrations. One section of the letter I found to be extremely distressing, and I read and quote from that directly:

> That many people internally, as well as externally, believe that the current emphasis of National Forest Programs does not reflect the land stewardship values embodied in our forest plans. Congressional emphasis and our traditional methods and practices continue to focus on commodity resources.

That is the end of the quotation from their letter, and I find that statement almost incredible.

Mr. **Robertson**. Well, it is not complete.

Senator **McClure**. The region sold 82 percent of their annual average ASQ after Congress provided enough funding for the entire ASQ. In addition, Congress provided enough funding in wildlife and fish habitat programs from funding 65 percent of the plan as proposed in the President's budget, to 85 percent of the plan as enacted in the appropriation bill.

Why is the region so frustrated when the data indicates that the Congress is on their side?

Mr. **Robertson**. Maybe I should ask John Mumma, as the regional forester, to respond to that, but they are having problems getting into the roadless areas.

ROADLESS AREAS

Every time we try to enter one of those roadless areas, we have new court cases, we have to have an EIS, we have appeals and lawsuits, and so it is a major decision to enter a roadless area. About 25 or 30 percent of our timber sale program is dependent upon our being able to enter these areas, and it is just a long and drawn out process.

And I think that some of our people are beginning to get impatient with all the efforts that have to go into with getting——

Senator **McClure**. Well, I don't blame them for getting frustrated, but that seems to me to be a frustration that would come from the other side rather than from the side expressed in their letter.

Mr. **Robertson**. I will ask Regional Forester John Mumma to respond to that.

Mr. **Mumma**. Senator, I would like to respond to that. I think if you will look at that letter in full, what they were trying to express in that open letter—and that open letter really did not get into much budgetary information, but what they were trying to point out was that there is that apparent discrepancy between what we have in the forest plans and what we are actually being funded.

OIL AND GAS

And the best way that I think we could explain it is that we probably have not done a good enough job in explaining to the Congress what the costs are in implementing the plans. While they did mention the fact about the commodity resources, I would like to give you some figures about another area that is of concern, and that has to do with oil and gas and mining programs.

That is big business in our part of the world as you know. There are some 1,100 oil and gas wells in Custer National Forest alone, and major world class mining operations. Yet, these were funded at about 50 percent of our total oil and gas and minerals program.

Now, probably we have not done a good enough job in coming forward and expressing that to you, but we certainly have needs there. The percentages we have talked about earlier in the afternoon were about recreation and wildlife and fisheries.

There is a high degree of frustration, and I know you are very well aware of it. I think what you are hearing is right from the heart of those very people that you spoke about earlier who are trying but who are challenged on every front with appeals and lawsuits. I think they are expressing some frustration.

Senator McClure. Well, I can read the entire letter, and as a matter of fact, Mr. Chairman, I think it would be helpful if that letter were made a part of the record of this hearing.

Chairman Byrd. There being no objections, it is so ordered.

[The information follows:]

U.S. Forest Service,
Region 1,
Missoula, MT, November 1989.

Hon. F. Dale Robertson,
U.S. Forest Service,
Washington, DC.

Dear Dale: The Forest Supervisors of the Northern Region identify strongly with the Mission of the Forest Service—Caring for the Land and Serving People. The success of the Forest Service in carrying out this mission is vital to all of us. A core value we share is being able to contribute to the survival of the Forest Service during these difficult times in National Forest management and to contribute to the achievement of organizational excellence in our future as a natural resource management agency. Therefore, we are grateful for the opportunity to be a part of future solutions to help you lead us into excellence in the 1990's. We welcome the opportunity to "have your ear" for some "straight talk" about the important issues we are facing in the Northern Region—issues dealing with the survival and success of the organization we love.

These are troubling times for many of us. The values of our public and our employees have been rapidly changing and have become increasingly divergent, increasing the level of controversy surrounding the management of National Forests. We are seeing a drastic increase in the number of challenges to our land and resource management activities, challenges which are not easily overcome by throwing more money at them or working harder to educate our publics or increasing the amount of documentation. Many people, internallly as well as externally, believe the current emphasis of National Forest programs does not reflect the land stewardship values embodied in our forest plans. Congressional emphasis and our traditional methods and practices continue to focus on commodity resources. We are not meeting the quality land management expectations of our public and our employees. We are not being viewed as the "conservation leaders" Gifford Pinchot would have had us become, despite strong support of the rhetoric in our Mission Statement. We are worried that if we don't make some major changes as an agency, our Mission Statement will never move from rhetoric to reality.

Despite these troubled times and the frustrations our employees are feeling, your people in Region One continue to work diligently to keep resource programs moving, to meet targets, and to serve the public. Still, there is a growing concern that we have become "an organization out of control."

Over the past two years, the Region One Forest Supervisors shared many of the frustrations coming from the ground with our Regional Forester. He listened carefully to the concerns of Region One employees. We know he shared these concerns with you during the past year. We believe that they have been communicated clearly. Region One Supervisors have also participated with Supervisors in other Regions and concur with the concerns and recommendations jointly developed by the Region 1, 2, 3, and 4 Forest Supervisor group.

In general, we feel that the concerns and recommendations of the joint Forest Supervisor group, to some extent, are symptomatic of a larger problem in our organization. We have become a dysfunctional Forest Service family. The concerns for mixed messages in the Supervisor's report is an example. Another is the feeling that we just can't continue to do more with less. The Ranger District plate is overflowing and the stress on our workforce to continue to crank out more targets, work on more initiatives, work harder on more customer service projects, and work harder to resolve conflicting values at the field level, is becoming too much to ask them to bear. The stress in the organization is serious. A "can do" attitude will not save us this time. We are spread too thin. It is time that we start dealing with our internal problems, before we crack apart at the seams. It's time to start prioritizing the work we need to do. Excellent organizations "stick to the knitting." As an organization, we need to figure out what the "knitting" ought to be for the 1990's.

Despite our full platter and the conflicting demands placed upon us, we have been pulling together with our Regional Forester to do the best possible job in meeting these challenges at our level. We will continue to work together as a Regional Leadership Team to prioritize and implement workable strategies that bring us closer to our basic mission and to the resource objectives of our forest plans. However, we feel that it is time for some important self-evaluation as an agency. We would really like to see our Chief bring us together as an organization. We are not asking you to be our Messiah, just let us work with you to identify and implement ways we can improve our leadershiup for the National Forests. Let us be the true conversation leadership that the President needs!

To work toward the resolution of these issues, we would like to invite you to our Region One Regional Leadership Team meeting. In that setting, we feel we could frankly discuss issues of concern and develop a commitment to work together and move ahead. We invite you to our Team meeting on January 30-31, 1990.

Sincerely,

REGION 1 FOREST SUPERVISORS.

JOINT FOREST SERVICE SUPERVISION GROUP

Senator McCLURE. I should read the entire letter to see that frustration, but most of the letter deals with the frustration, the inability to manage or to follow the plans once adopted after that arduous process.

Maybe it is summarized best by the sentence at the bottom of the first page of that open letter: "In general, we feel that the concerns and the recommendations of the Joint Forest Service Supervisor Group to some extent are symptomatic of a larger problem in our organization. We have become a dysfunctional Forest Service family."

That is pretty hard language from somebody who takes as much pride in an organization as I know they do. The balance of the letter seems to me to be right on that point, and yet I read that other letter that I quoted a moment ago that said that there is too much emphasis on commodity programs. It said, congressional emphasis on our traditional methods and practices tend to do that.

And yet I just quoted the figures, and I think they are correct, that we provided enough money to fund 85 percent of the noncommodity uses on that plan in region 1.

You sold 82 percent of the average annual ASQ, even though we provided enough money to pay the entire ASQ. Now, I don't mean those figures to be misleading. We funded more than 82 percent of the ASQ, but when taken in the context of present public discussion about Forest Service management, it would seem to me that if their point was, hey, we are not getting the job done because you loaded to much on us, they could have said that without emphasizing what in the current context of public discussions is seen as an imbalance in the funding when that is not the problem.

You can't get into the roadless areas, and that is on the other side of the equation. Incidentally, and for the record, I was pleased to see that you, Mr. Leonard, the Associate Chief, responded in writing to Mr. George Frampton, who is the president of the Wilderness Society, on errors included in a fact sheet issued for Earth

Day, and that you indicated that their fact sheet was filled with factual errors, half-truths, and innuendos.

REFORESTATION

I commend you for that statement, because indeed I had the same feeling. Speaking of the reforestation efforts of the Forest Service over the past 60 years, the Wilderness Society fact sheet states that "the vast majority of such reforestation efforts are far from adequate."

Has the Wilderness Society responded to your letter, Mr. Leonard?

Mr. LEONARD. I have had no response.

Senator MCCLURE. How prevalent is this type of erroneous use of information by environmental organizations? Is that——

Mr. LEONARD. It is pervasive.

Senator MCCLURE. Well, I am reluctant to make the analogy between the misuse of information of the Wilderness Society and by the region 1 supervisors; however, in this instance, they seem to be in the same boat.

TREE PLANTING INITIATIVE

Included in the President's fiscal year 1991 budget is an additional $175 million for a tree planting initiative on private lands. One of the objectives of this program is to offset increases in U.S. carbon dioxide emissions. We are trying to find a way to fix that carbon and remove it from the atmosphere. How do the net Federal costs of this program compare to the net costs of below-cost sales per unit of carbon fixed?

Mr. ROBERTSON. I don't think that we have ever made that calculation.

Senator MCCLURE. Would you do so?

Mr. ROBERTSON. We will make a calculation on that.

PAYETTE NATIONAL FOREST

Senator MCCLURE. I will not take the time to go into the question of why can't you clean the toilets in the Payette National Forest. That is not a national issue, but it is symptomatic perhaps.

I do want to raise the issue at least parenthetically at this point. I have a suspicion that I know why, but there is something wrong if indeed the public doesn't understand why they have to or rather why you have to close recreational opportunities in National Forest Service campgrounds because you can't maintain them.

CLOSED CAMPGROUNDS

I suspect that there are reasons why, but that the public has not been told the reasons why. All they see is the sign up there that says that this campground is closed. All they see are the public releases that say we can't pump your toilets this year, so you can't use them even though the money was provided. So where did the money go?

I think that there are answers, but I think that the public ought to know what those answers are rather than having to respond to a

Forest Service that is seen as being uncaring about their immediate recreational needs.

We are trying to do a better job, and I think that one of the areas where we can do better is in telling the American public that we had some rather unusual fire costs in the last couple of years. We have had immense additional costs in meeting your forest management planning process requirements.

APPEALS

The cost of appeals. Every time there is an appeal and a Judge decides that you need to do something else, what do you have to do? Is it 6 or 8,000—redo 6 or 8,000 forest plans to meet the current objectives of a court somewhere? Isn't that about right?

Mr. ROBERTSON. That is about how many timber sales we got in the process, or in the planning stage or——

Senator MCCLURE. And how much does that cost each time you have to do that?

Mr. ROBERTSON. Millions of dollars.

Senator MCCLURE. It costs a lot more than pumping the toilets on 12 campgrounds. The public does not know why it is costing that. They would like to know why it is that you can't take care of their recreational opportunities in the Forest Service campgrounds, and they are entitled to know.

Mr. ROBERTSON. I agree with you.

Senator MCCLURE. Thank you very much, Mr. Chairman. I do have some additional questions to submit for a response in writing, and I would also ask unanimous consent that questions submitted by Senator Domenici also be responded to in writing.

HARDWOOD INDUSTRY

Chairman BYRD. Without objection, that will be so ordered. Mr. Robertson, I would like to turn our attention now to another aspect of the hardwood industry. I am very committed to pursuing programs and projects that have the potential to contribute to the economic well-being of the people that I serve.

In forestry, that includes making every effort to gain as much value from our abundant hardwood resources as possible. We must continue to strive toward better ways of processing our local timbers, so that we are not just exporting raw materials.

Last fall, at my direction, the Forest Service commissioned a study assessing the feasibility of establishing a training center for workers in the hardwood processing industry. Many of the manufacturers are small in size, and do not have extensive training programs, nor the facilities in which to conduct such a program.

MERCER COUNTY, WV

Mercer County, in southern West Virginia, has been pursuing the concept of establishing just such a training center. For such a center to succeed, there needs to be strong cooperation between the local community, the industry who would use the center, and the Forest Service, who is in an excellent position to help as a catalyst in pulling together relevant information and expertise.

A second study examined the feasibility of establishing a flexible manufacturing center for use by the wood products industry. As you know, many of the firms in the wood products industry are small operations, and technological advances in hardwoods processing machinery have been made, but some firms are unable to partake of these advances because of the tremendous capital outlays required to purchase such equipment.

And, a firm may not be large enough to keep such equipment in operation on a continuous basis. Such a center, once established, would operate largely on a time-share basis. Different manufacturers would make arrangements to use particular pieces of equipment, and would pay accordingly.

Profits to companies would likely be greater because companies would not need to invest large capital outlays to produce finished products. The center would be able to use some of the fees to engage in further research and development, as well as to address its operating and maintenance requirements.

HARDWOOD INDUSTRY

These facilities would help enhance the competitiveness of the hardwoods industry, not only in West Virginia, but nationally, by helping to bridge the gap between current manufacturing practices and newly developing methods and technologies, and by providing the manufacturing and technical training necessary for the woodworking work force to be as efficient and productive as possible.

These are steps that must be taken in order to address the balance of trade with respect to wood products, and if that means more jobs and increased prosperity for the Appalachian region, then I intend to do everything I can to foster that competitiveness.

Now that the Forest Service has had a chance to review these feasibility studies, I would like to review a few of their findings with you.

HARDWOOD TRAINING AND MANUFACTURING COMPLEX

Did the studies involve industry in assessing the need and potential uses for a hardwoods training and manufacturing complex?

Mr. ROBERTSON. Yes; the two colleges that did the studies did do that. They sent out questionnaires to private industry and also made some personal visits to several of the plants.

Chairman BYRD. What needs did industry express with respect to their training requirements?

Mr. ROBERTSON. Well, the biggest concern was to have a highly trained operator, machine operators, that were skilled in using high technology computer aided equipment, as well as training their managers and supervisors.

And I brought a little exhibit along, Mr. Chairman, which you may have seen. This is a good example of computer aided design and manufacturing, where use can be made of the computer and its flexibility, to cut out the pieces that would go into a chair out of low grade hardwood.

Normally, wood that would go into this would either go into pallets or rough sawed lumber, or not be used at all. Through this high technology equipment with skilled operators, we can produce a very high valued product out of low valued hardwood.

So, there is a big potential here to produce some high value products, but you have to have trained and skilled workers to do it.

Chairman **Byrd**. What other requirements has industry expressed as necessary to remain competitive in today's global markets?

Mr. **Robertson**. I think there are two. It means staying up to date with the latest technology, as well as having information about the world market situation for a class of products. As you pointed out, this industry is made up of a lot of very small operators. In fact, nationally there are about 17,000 small hardwood operators, and it is very difficult for them to gather the market information and simulate it and figure out what that means to them as a company or a business.

Chairman **Byrd**. What is the present capacity within the hardwoods industry to conduct comprehensive training for its employees?

Mr. **Robertson**. Again, because of the very large number of very small operators, they do not have much capability, they are widely dispersed geographically, and they have a limited financial capability. I think that most of the training that they get is on-the-job training, or through some kind of manufacturer that may sell them some machinery.

WOODWORKING TRAINING

Chairman **Byrd**. Does a comprehensive woodworking training facility exist in the United States?

Mr. **Robertson**. Not that I know of. There are places that provide courses in woodworking, but not of the comprehensive nature that we are talking about here; not in only woodworking, but also computer aided design and manufacturing.

Chairman **Byrd**. What do other countries have to offer?

Mr. **Robertson**. Well, some of the European countries have such training centers. I think in the case of Italy, there is a joint government and private sector training facility, and in the case of Germany, there is one run by the Federal Government of Germany. Some of the European manufacturers of machinery provide this training for people.

Chairman **Byrd**. Do you see a need for such a facility in the United States, and would such a facility provide an environment for U.S. industries to be more competitive with the leading international manufacturers?

Mr. **Robertson**. I think so. I mean, we have to stay up with our competitors if we are going to stay competitive in the world market. Again, it takes the latest technology, and well trained and skilled workers, and with a knowledge of the market, and what are consumer requirements are.

PRINCETON, WV, AS TRAINING CENTER

Chairman **Byrd**. How could such a training and manufacturing facility be linked to ongoing research and development efforts already established at the Advanced Hardwood Processing and Technical Resource Center located near Princeton in Gardner?

Mr. **ROBERTSON**. I think it is a natural fit. We have a lot of our hardware research that we do located at Princeton, and we have some very good scientists. So I see it as a two-way relationship, where we can use this facility. It would be a pilot test center for some of the research. The research fed immediately into the curriculum and concerns about the manufacturing of products. So, it should be a natural fit.

Chairman **BYRD**. How would such a complex compare with what the leading international machine manufacturers are doing elsewhere, such as in Italy, or Sweden, or Germany?

Mr. **ROBERTSON**. I think it would be similar to what is going on there.

Chairman **BYRD**. What do you think they are doing?

Mr. **ROBERTSON**. I don't know if they have the research that would be hooked into the extent that we would have it, or could have at Princeton.

Chairman **BYRD**. So, the comparable facilities in other countries may not be linked to the government facilities?

Mr. **ROBERTSON**. As closely as to the research. Now, in Germany, it is a government facility, and in Italy it is a joint private sector with government; but what I don't know is whether they would have such a close interconnected link with the researchers that are doing the work on the hardwood research.

Chairman **BYRD**. What is the cost estimate to establish those centers?

Mr. **ROBERTSON**. The estimated cost in these studies for the manufacturing facilities would be about $3.5 million, and the training facility would range from $5.8 million to about $9 million.

The reason for the big difference is that the $9 million would provide a residential situation, with some dormitories or residential halls, and dining facilities, and a rather modern media shop, where video tapes and training materials could be produced to be distributed throughout the hardwood industry area.

JOB CORPS PROGRAM

Chairman **BYRD**. What other types of innovative projects has the Forest Service entered into previously?

Mr. **ROBERTSON**. Along this line, I think our best example is the Job Corps Program. We run 18 job corps centers, and these are young men and women, from 16 to 21 years old, and we have contracts with many of the major trade unions, like the carpenters union, and the painters union, and plaster unions.

Whereas, the unions actually come onsite, and provide vocational training to the Job Corps people. The nice thing about that is that the union takes some responsibility for placing the trained graduates back home on a job with their unions.

I think another good example is the one that you have been a believer in, and that is the timber bridges. This is another good example of doing some research, outreach demonstrations, where we are creating jobs in the private sector.

We have done a lot of work in the Forest Service in promoting tourism, and we are teaming up with the private sector and States where there are national forests to promote tourism, and good examples are the States of Idaho, and Utah, where we are teaming up with them to have joint marketing and building up the tourism industry, and there is a lot of potential as well for that to even expand.

HARDWOOD INVENTORY

Chairman **Byrd**. What is the present status of hardwoods in the northeast? Are more being grown each year than are being harvested?

Mr. **Robertson**. Yes; based on our latest inventory, we are growing about 80 percent or so more hardwood timber than we are utilizing. So, the inventory is building rapidly in the east.

Chairman **Byrd**. Wouldn't a facility that allows for greater manufacturing flexibility offer an opportunity to use more of these species and thus enhance their values?

Mr. **Robertson**. Yes; I think so. Again, if you have the flexibility in using some of this high technology machinery, you can make a lot of things out of different species. You can adjust those machines very quickly to change products, and what species you are using, and that is really important if you are going to be able to use all of the species and produce products that the customer is demanding, and meet their specifications.

GYPSY MOTH RESEARCH

Chairman **Byrd**. What level of funding is available for gypsy moth research at Morgantown, WV, in fiscal year 1990?

Mr. **Robertson**. Research?

Chairman **Byrd**. Yes, sir; gypsy moth research.

Mr. **Robertson**. It is $1,939,000.

Chairman **Byrd**. What is the base funding required in fiscal year 1991 to continue last year's program?

Mr. **Robertson**. It would be about $2 million, a little over $2 million.

Chairman **Byrd**. What is the funding proposed for this work unit in fiscal year 1991?

Mr. **Robertson**. It is $1,178,000.

Chairman **Byrd**. So, that falls far short from the base level?

Mr. **Robertson**. Yes, sir.

Chairman **Byrd**. Is the reduction in funding associated with the completion of any research?

Mr. **Robertson**. No, sir.

Chairman **Byrd**. What impacts would be experienced by the gypsy moth research project as a result of the proposed reduction?

Mr. **Robertson**. Most of what would be affected would be our extramural research that we have there with West Virginia University, and several other universities like Pennsylvania State. So, we would be cutting out most of those extramural projects.

Chairman **Byrd**. Would any specific studies grind to a halt?

Mr. **Robertson**. Those studies that are being done by those universities would.

Chairman Byrd. Would any of these include an assessment of the impacts of defoliation from the gypsy moth on water quality and the habitat population of the grey squirrel?

Mr. Robertson. Yes.

Chairman Byrd. Any others?

Mr. Robertson. Yes; there are other studies that would be reduced, and I would ask Dr. Sesco to answer that further.

Dr. Sesco. Senator, there would be some reduction in studies on population dynamics and there would be some reduction in monitoring research to detect changes in the gypsy moth population trends as well. There would be a pretty broad brush of reductions.

CONCERNS ABOUT RESEARCH BUDGET

Chairman Byrd. I am concerned about the proposals in your research budget. I cannot stand by idly and tolerate a complete abrogation of our responsibility to deal with the gypsy moth and the impacts that it is having on our hardwood forests in the east. Further research needs to be conducted, and I intend to restore funding so that critical scientific research does not get disrupted.

The Subcommittee will be taking a close look at the research program. I am not opposed to the research topics proposed under the priority program, but I am concerned about increasing these programs at such a drastic cost to existing long-term scientific monitoring.

APPALACHIAN INTEGRATED PEST MANAGEMENT

The gypsy moth continues to affect Appalachia. The front line for the spread of the gypsy moth is now in northern West Virginia and along the Shenandoahs in Virginia. This pest is causing tremendous defoliation, which can affect many other biological cycles and habitats.

Yet, we are presented with a budget that fails to acknowledge the damage caused by this insect. The budget requests no funding for continuation of the Appalachian Integrated Pest Management Program, nor are any funds requested for the cooperative pest suppression program, which is cost-shared for suppression activities on State and private lands. Pretending that the gypsy moth is not a problem is unacceptable, and is a game I will not play.

I will not stand by idly and simply let nature take its course while the gypsy moth works its way through my State. We must continue to make every effort possible to deal with this pest, and to continue to develop treatment methods that are responsive to sensitive environments, and to conduct research that allows us to improve those treatment methods, and to protect the many values found in our forested lands.

How many acres were treated in the AIPM area in 1989?

Mr. Robertson. About 46,000 acres.

Chairman Byrd. And what is the total area?

Mr. Robertson. It is 12.8 million acres.

Chairman Byrd. How much defoliation occurred within the AIPM area in 1989?

Mr. Robertson. Approximately 73,000 acres.

Chairman Byrd. How would that compare to 1988?

Mr. **ROBERTSON**. There were only about 1,000 acres in 1988.

Chairman **BYRD**. Why the dramatic increase? Was it predicted?

Mr. **ROBERTSON**. We had predicted a significant increase, about 40,000 acres, but the actual was 73,000, so the increase was about 85 percent over what we predicted.

Chairman **BYRD**. How has AIPM adjusted its program to reflect the dramatic increase which occurred in 1989?

Mr. **ROBERTSON**. We will be spraying more acres this year, in terms of trying to get more accurate projections. We really got started under AIPM in 1988, and so the projections that we made for 1989 were prior to the time that we really had much information, in terms of detection of the gypsy moth in low level population areas.

So, we now have better information in place, in terms of a grid for counting gypsy moths and predicting what the future population might be. In fact, this spring or summer we will spray about 274,000 acres in the AIPM area, based upon our predictions of expanded populations with the new survey techniques. We would probably have not have treated these acres if we were relying on the old traditional way of predicting populations.

POTENTIAL GYPSY MOTH DEFOLIATION

Chairman **BYRD**. What do you predict as the potential defoliation in 1990?

Mr. **ROBERTSON**. We think it may be about 380,000 acres.

Chairman **BYRD**. And how much of that would be in West Virginia?

Mr. **ROBERTSON**. About 200,000 acres in West Virginia.

Chairman **BYRD**. And 180,000 in Virginia?

Mr. **ROBERTSON**. Yes.

Chairman **BYRD**. How much of the acreage will you treat?

Mr. **ROBERTSON**. We are proposing to treat about 274,000 out of the 380,000.

Chairman **BYRD**. Why is there a large disparity between the proposed treatment and anticipated defoliation?

Mr. **ROBERTSON**. There are two reasons. One, the gypsy moth is well established in the northern areas of the AIPM area, and the whole strategy with the AIPM is to get out ahead of the major areas where it has been established.

So, what we are really doing in the northern part of the area, where it is well established, is treating it as though it were outside, and putting our emphasis out ahead of the gypsy moth. This accounts for about 66,000 acres.

The other 40,000 acres are in the Shenandoah National Park. The Park Service, under the EIS, has chosen not to treat in the national park. The other point as to why we are not treating the 66,000 acres, is because we ran out of suppression dollars in the AIPM area.

Chairman **BYRD**. How many of the treatment acres will be in West Virginia?

Mr. **ROBERTSON**. About 177,000 acres, or two-thirds of the total.

Chairman **BYRD**. What will be the priority areas for treatment in West Virginia?

Mr. **Robertson.** Well, again, where the gypsy moth has established itself well within the 12.8 million acres, we will treat that on the same priority as we do outside, and that is the high value areas—residential areas, communities, and high valued timber, recreation, and other areas.

Chairman **Byrd.** Does the State have a voice in developing the priorities?

Mr. **Robertson.** Yes; they do.

Chairman **Byrd.** How much of a voice?

Mr. **Robertson.** We sit down with them and jointly agree upon what our priorities are, and what areas ought to be sprayed.

Now, outside the AIPM it is a cost-share arrangement, so West Virginia has to look at its budget and what are priority areas or what they can finance within the 50 percent cost-share arrangement.

Chairman **Byrd.** What are your plans with respect to payment for future treatments in the AIPM and project area?

Mr. **Robertson.** As you pointed out, Mr. Chairman, in this budget, there are no funds in 1991 for cost-sharing, or to do treatment in the AIPM. So, under this budget there would be none.

GYPSY MOTH TREATMENT OPTIONS

Chairman **Byrd.** What are the treatment options that will be used under AIPM in 1990?

Mr. **Robertson.** In the areas that have been defoliated, we will be aerial spraying Dimilin, and on part of it, Bt, and a virus known as Gypchek. Outside the main defoliation areas, in the low level population areas, we will also be using these treatments, plus pheromone flakes, and sterile male moths.

Chairman **Byrd.** How do the costs per acre differ between and among these various treatments?

Mr. **Robertson.** Bt costs about $9 to $10 an acre, and Dimilin is cheaper, about $6 to $7 an acre. Gypchek, the virus, is fairly expensive, because it is expensive to produce, and costs about $30 an acre.

Chairman **Byrd.** And what are the advantages and disadvantages of using Gypchek?

Mr. **Robertson.** It is very species specific. It only affects the gypsy moth, and does not affect other moths or other insects. The virus has no known environmental side effects, so for that reason, a lot of people support using Gypchek.

Chairman **Byrd.** And the disadvantages?

Mr. **Robertson.** It is costly, and we just don't have the facilities. There is no private company yet that has taken the initiative to produce Gypchek in the quantity that we need to deal with the gypsy moth.

Chairman **Byrd.** What can be done to increase production of Gypchek?

Mr. **Robertson.** What we would like to do is to get the private sector interested in it, and get the private sector producing it. We have tried this and have not been very successful. I think this may be one area that we ought to use some of this innovative creativity, and see if we can't use some seed money to get a private firm interested in producing this for us.

ADDITIONAL COMMITTEE QUESTIONS

Chairman **Byrd**. Mr. Robertson, I think we will close our hearing for today. I will submit questions to you, as will the other members of the subcommittee, and I thank you for your testimony, and for that of your associates.

[The following questions were not asked at the hearing, but were submitted to the Forest Service for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

TIMBER BRIDGES

001. Question: What progress is being made in addressing the potential uses of timber bridges for railroad bridges?

Answer: The railroad industry recognizes that wood is a viable alternative to concrete and steel bridge construction. Many of their trestles are made of wood. There is potential to expand the use of a variety of hardwoods in trestle construction. We have not fully explored that segment of the market.

RESEARCH

Mr. Robertson, let us now turn to the research programs of the Forest Service. As indicated earlier, the overall research budget for FY 1991 is increased over the FY 1990 level. But looking at the bottom line for the research budget fails to tell the whole story of what is happening to this vital program. An emphasis on priority research projects has resulted in a considerable internal reallocation of limited resources. The core, or foundation, research program, which consists of may long-term studies and scientific monitoring, is proposed to decrease by $11.8 million, or 12 percent, from last year's level. In exchange, the priority programs are proposed to increase by $15.3 million, or 32 percent, over FY 1990.

002. Question: What are the priority research areas? How were they determined?

Answer: The priority areas in 1991 are global change, water quality, threatened and endangered species, southern forest productivity, catastrophic fires, and enhancing forest-based economies in rural America. We also view our ongoing foundation programs as high priority. Important programs, such as gypsy moth research and forest inventory work, are in the foundation program.

We involve our clients in determining our priority research programs. Clients include other parts of the Forest Service, interest groups, academia, and industry representatives. Many needs are placed on the table. We review them carefully to determine which ones are truly a federal responsibility and which ones we have the scientific foundation and capability to address. We ask interdisciplinary teams to recommend what work is highest priority and solicit peer review of these recommendations. The Chief makes the final decision on which ones to recommend to the Department in our budget request and the funding levels requested.

003. Question: How much funding did the Forest Service request of the Department for each of the priority programs, and the foundation program, respectively?

Answer: Our agency request for priority research programs was $52.8 million: $19.7 for global change, $4.7 for water quality, $5.5 for threatened and endangered species, $11.0 for Southern forest productivity, $8.1 for catastrophic fires, and $3.8 for enhancing rural based economies. The request for the foundation program $112.2 million.

004. Question: How much did the Department request from OMB?

Answer: The Department requested slightly less--$49.6 million for priority research programs and $110.4 million for the foundation program.

005. Question: How much money was added to the priority programs by OMB?

Answer: OMB directed the Department to increase the priority research programs by $13.4 million in the President's Budget.

006. Question: Was additional funding added by OMB or did your receive specific instructions to absorb these funds?

Answer: No additional funds were received.

007. Question: What happens to the foundation research program under such a drastic reallocation? Is one to infer from your budget proposal that basic research is not a priority for the Forest Service?

Answer: Although money had to be shifted from the ongoing foundation research program to fund priority research programs at levels requested in the President's Budget, foundation research remains very important. A strong foundation program is what gives Forest Service Research the ability to respond to unexpected problems as they emerge.

The foundation research program includes more than basic research, although basic research is an important component. The foundation includes maintaining a cadre of expertise in a variety of areas. Some of these skills include basic research, others are applied research skills.

008. Question: Are there long-term costs associated with eliminating some of the baseline efforts that have been underway for some time now? What contribution will these programs have if they are brought to a halt now and then resumed in several years? Is that even possible?

Answer: Yes, there are long-term costs associated with terminating some of our long-term foundation research studies. These costs fall into three categories: the cost of developing and maintaining scientific expertise; the cost of equipment obsolescence; and the cost of gaps in long-term databases.

Our scientists are specialists in particular lines of work. It takes time for a scientist to accumulate the necessary expertise to work at the cutting edge of science in a particular field. If directed to cease a certain line of work and devote attention to some other area, some scientists who are nationally recognized in their field of study may leave Forest Service employment in order to continue their research. In those cases where a scientist does take on new work, it is possible that there will be inefficiencies due to the time and training required to become proficient in a new area.

Even where restarting studies that have been discontinued may be possible, rising costs mean that it is usually more costly than completing any one study on its original schedule. In the aggregate, however, where many studies may never be restarted, it is better to reallocate resources to better address current policy needs.

009. Question: What is the estimate of the number of scientists and support personnel who will be RIFed, or let go, as a result of this proposal? How many years of scientific experience do these persons represent?

Answer: We expect approximately 120 scientists, technicians, and other support personnel to be affected, representing over 400 years of experience.

010. Question: How many new scientists do you propose to hire immediately under the auspices of increased attention to the priority research programs? Will you be able to hire this many people, with the requisite expertise?

Answer: About 90 new people will be hired in the priority research programs. In addition, between 70 and 80 existing positions will be reassigned to work on the priority research programs. In some cases where people with the requisite skills are not immediately available, we will use extramural cooperative agreements with universities to acquire the necessary skills to accelerate the research.

011. Question: Which research allocations are affected by this reallocation? Are any proposed for closure?

Answer: The President's budget proposes the termination of 18 research work units. Eleven of these will disappear through merger with other work units. The units disappearing through merger are located at Corvallis, Oregon (2 units); Olympia and Seattle, Washington; Berkeley, California; Bozeman, Montana; Orono, Maine; Research Triangle Park, North Carolina; Gulfport, Mississippi; Stoneville, Mississippi; and Madison, Wisconsin.

Seven will be terminated outright without merger. These units are located at Honolulu, Hawaii; Boise, Idaho; Missoula, Montana; Amherst, Massachusetts; Berea, Kentucky; University Park, Pennsylvania; and Pineville, Louisiana.

The mergers and terminations proposed will result in the closure of four project locations: Amherst, Massachusetts; Bozeman, Montana; Berea, Kentucky; and University Park, Pennsylvania. Orono, Maine was originally identified for closure in the Explanatory Notes, but has since been reconsidered.

012. Question: Will the remaining projects at these facilities need to be reassigned to other work units? What are the costs associated with such a reshuffling?

Answer: The mergers of units will cause some reassignment of work and relocation of individuals. In nine of the eleven mergers, units will be merged with other units at the same location or the scientists will remain at their current location, but report to a project leader at another location. In these situations, work will be adjusted with some scientists reassigned to different problems and no relocation costs will occur. In the remaining two mergers, eight scientists and technicians will be relocated. The average transfer of station cost is $46,000/person.

013. Question: What would the consequence of this reduction be to model formulations underway for devising a decision matrix for conditions under which to apply various gypsy moth treatments?

Answer: The reduction for insect and disease research funding proposed in the President's Budget would reduce all aspects of gypsy moth extramural research by almost 100 percent. This will include research on population dynamics, silviculture, impact assessment, microbial control, and aerial application.

A supplemental appropriation in FY 1987 greatly accelerated research on the gypsy moth by providing additional funds for extramural research. Since then, extramural funding has remained at a high level. This reduction would reduce extramural research to the pre-1987 level.

Findings from all aspects of the gypsy moth research are integrated into the Gypsy Moth Life System Model. Reduced extramural research funding will slow development of the model. Work will also be slowed on the gypsy moth expert decision model GYPSES, which is being developed jointly by West Virginia University, Virginia Polytechnic Institute and State University, the Pennsylvania State University, and Forest Service researchers.

GYPSY MOTH

014. Question: Why the dramatic increase in defoliation within the AIPM area in 1989? Was it predicted?

Answer: The increase in defoliation was due primarily to a tremendous increase in gypsy moth activity, apparently brought about by drought conditions in the preceding years and mild winter weather. Defoliation occurred on 1,000 acres in 1988. A large increase to 40,000 acres was predicted for 1989, but actual defoliation was much greater at 73,000 acres. Most defoliation occurred in areas adjacent to the AIPM boundary and neither our surveys nor those in the surrounding areas had predicted it.

015. Question: What are the advantages or disadvantages of using Gypchek?

Answer: Gypchek is effective against the gypsy moth and has no known impacts on other organisms or the environment. A disadvantage of Gypchek is its high cost.

016. Question: Are additional stocks of Gypchek available? What constrains you from using more Gypchek?

Answer: No. Use is constrained by the amount of Gypchek produced. Labor intensive production procedures, limited production facilities, and costs are barriers to greater production.

017. Question: What can be done to increase the production of Gypchek? Do you have a strategic plan to address these production shortfalls?

Answer: In the short run, we estimate that with necessary funding, production at existing facilities could be expanded to treat as many as 20,000 acres per year compared to 1,700 acres in 1990. In the long run, options for increasing production include commercialization or establishing a Federal production facility. During the last ten years, several private companies have evaluated commercial production and one firm is still actively investigating the possibility. A USDA task force is currently exploring the options to produce enough Gypchek to treat 250,000 acres per year. The Task Force report will be the basis for a strategic plan.

MONONGAHELA NATIONAL FOREST

Chief, I'd like to turn our attention to the Monongahela National Forest. Just as many other states are proud of their natural beauty, we in West Virginia are equally boastful about the magnificent resources of the Monongahela National Forest. I understand that the campground near the Seneca Rocks Visitor Center that had to be rebuilt after the 1985 flood is ready to receive visitors.

Other visitors who travel to the Smoke Hole area use the Big Bend Campground. This campground is located at the end of a 4 1/2 mile road that follows the South Branch of the Potomac River. Sometimes the road bed is little higher than the river bed.

018. Question: Who has responsibility for the road -- the Forest Service or the State?

Answer: The road is now under Forest Service jurisdiction. About three miles of the road were under state control until earlier this year.

019. Question: On average, how many visitors travel this road to visit the campground, and fish along the river?

Answer: 15,000 people annually.

020. Question: What is the design standard of the road? Is it able to accommodate safely the travel trailers and recreational vehicles that many campers use?

Answer: The Forest Service portion into the campground is a single lane road with spot gravel only and is not adequate to accommodate travel trailers and recreation vehicles (RV's). All of the State portion was rebuilt after the 1985 flood but not to the standard needed to accommodate the increasing recreation traffic using the road.

021. Question: Are some potential visitors to the National Recreation Area hesitant to venture to Big Bend because of the condition of the road?

Answer: Yes.

022. Question: What can be done to address some of these concerns?

Answer: Improvements could be made to the drainage and surface of the main roadway, and reconstruction of the narrow and steep entrance down into the campground.

023. Question: What is the estimated cost to make these improvements?

Answer: The estimated cost is $300,000

As you know, many of the visitors to the forest are able to take advantage of the fisheries opportunities in cold water streams, warm water streams, and various impoundments.

024. Question: What is the estimated value of expenditures in the state of West Virginia that are attributable to the trout fishery resources on the Monongahela National Forest?

Answer: A 1985 study provided an estimate of $22 million.

025. Question: How many fish structures are presently located on the Monongahela National Forest?

Answer: A total of 520 fish structures have been constructed on the Forest.

026. Question: What resources are necessary in FY 1991 to allow the same level of fisheries work as the forest was able to accomplish in FY 1989?

Answer: In order to accomplish a program at the same level in FY 1991 as we had in FY 1989 would require an additional $420,000. The program would include the construction of 250 structures, the improvement of 5 acres of fish habitat, and 75 miles of stream inventory.

027. Question: How many fish structures will be feasible given the initial FY 1991 budget allocation for the Monongahela National Forest?

Answer: Based on the FY 1991 President's Budget request, a total of 87 structures could be constructed on the Monongahela National Forest.

028. Question: How many fish structures are anticipated in the land management plan for the Monongahela?

Answer: The Forest Land and Resource Plan projects 1,484 fish habitat improvement structures.

029. Question: What success have you had with the Challenge Cost-Share program on the Monongahela National Forest?

Answer: In FY 1989, approximately $50,000 was spent on Challenge Cost-Share Projects.

Last year, Congress appropriated $150,000 for design of new ranger district offices at Richwood and Petersburg, WV.

030. Question: What is the status of the design activities for these facilities? When will the design be complete? Will these facilities be ready for construction in FY 1991?

Answer: The Forest is negotiating a design contract with an architect for design of the Richwood office. We anticipate we will have a contract within the next several days and design will begin immediately. Design will be complete in August. The Forest will negotiate and award a design contract for Petersburg early this summer. Design will be completed this fall. Both offices could be contracted in FY 1991.

031. Question: What is the current estimate of construction costs for these two ranger district offices?

Answer: For Petersburg, the estimated cost is $1,088,000; for Richwood, the estimate is $975,000. Both estimates include the associated road and paving costs.

032. Question: What additional visitor services will each district office be able to provide in the respective new facility?

Answer: Each new office will have a room dedicated to VIS activities which will include displays, maps, and other visitor information.

033. Question: Are the current structures handicap-accessible? Will this situation be changed according to the new design plans?

Answer: The present Petersburg facility is not handicap-accessible. Both new buildings will be.

SPRUCE KNOB-SENECA ROCKS NATIONAL RECREATION AREA

Mr. Robertson, as you know, and certainly, as Supervisor Page knows, the Spruce Knob-Seneca Rocks National Recreation Area remains a very popular section of the forest. Visitors in this area are able to visit the Spruce Knob observation tower, which I helped dedicate several years ago. The summit at Spruce Knob is the highest point in West Virginia.

034. Question: What was the visitation at Spruce Knob last year?

Answer: Visitation in the Spruce Knob area was approximately 104,000 Recreation Visitor Days (RVDs) in FY 1989.

035. Question: What is the accessibility to the observation tower?

Answer: The observation tower is accessed by a steep, narrow, winding, graveled forest road that is approximately 10 miles long.

036. Question: Are visitors who are traveling with trailers or recreational vehicles able to reach the tower? What about tour buses bringing visitors to the area -- especially those that have visited the Seneca Rocks Visitor Center?

Answer: Visitors towing trailers, driving recreational vehicles, or riding in tour buses are able to reach the tower site. However, some people choose to not make the trip or to turn back while enroute due to the difficulty of driving on a steep, narrow, mountain road.

037. Question: Are there alternative routes that visitors to the observation tower can access?

Answer: Alternative routes are available, but they are longer and also involve steep, narrow, mountain roads.

038. Question: What steps can be taken to help improve the visitor experience at Spruce Knob? What are the associated costs?

Answer: Visitor service would be enhanced by providing an improved road to this popular area. An environmental analysis and updated road design report are needed to evaluate the feasibility of providing improved access. The estimated cost for such an analysis and report is estimated to be $675,000 of Road Construction funds.

I am committed to doing what I can to enhance the natural values of the Monongahela National Forest. The people of West Virginia are justifiably proud of the benefits the forest has to offer, and I intend to do everything I can to see that additional improvements and enhancements continue to be made so that our visitors are able to experience fully the recreation, cultural, and wildlife opportunities of the magnificent Monongahela National Forest.

LAND ACQUISITION

The fiscal year 1991 request for land acquisition includes two parcels in the Monongahela National Forest. These are referenced as the "Dolly Sods" and "Allegheny" tracts.

039. Question: Would you describe these parcels briefly and indicate why each acquisition is important?

Answer: The Dolly Sods property is adjacent to the Dolly Sods Wilderness and contains potential habitat for two threatened and endangered species. The tract includes the headwaters area of the existing wilderness. The property also includes deposits of strippable coal in commercial quantities. Similar deposits are being surface mined in areas north of the property.

The Allegheny Battlefield Complex purchase would complete the acquisition of one historic military site and secure all of another. Both sites were a key part of the Civil War campaigns in this area, including General Robert E. Lee's Cheat Mountain campaign.

040. Question: Have appraisals been completed in both cases?

Answer: The appraisal has been completed for Dolly Sods North. The appraisal is underway for the Allegheny Battlefield, but it has not been completed.

041. Question: Are the present owners willing to sell the "Dolly Sods" tract at the appraised value? Is the same true for the "Allegheny" tract?

Answer: Yes, the present owners are willing to sell the Dolly Sods tract at the appraised value. The owners of the Allegheny tracts are willing to sell, but we do not yet have an appraised value.

I understand that the land acquisition priority list contains a third tract in the Monongahela National Forest but that one apparently was not ranked high enough to make the funding cut-off. I am referring to the "Cranberry" tract which was ranked number 176 on the nationwide OMB priority list.

042. Question: Could you tell me exactly when the OMB land acquisition priority list was constructed?

Answer: January 27, 1990.

043. Question: Has anything occurred since that time that would change the acquisition priority number for the "Cranberry" tract if you were developing a new priority list today?

Answer: No, there have been no further adjustment of this tract's priority.

044. Question: Does the very fact that the "Cranberry" tract made the national priority list at all indicate that the Forest Service considers this to be an important acquisition?

Answer: Although the Cranberry Tract was not included in the national priority listing funded by the FY 1991 President's Budget, the Forest Service considers this tract to be an important acquisition. It is listed as number 67 on the Forest Service acquisition listing.

Turning to the Service's general land acquisition program now -- I'm interested to know what the Service does with the extra money when the Congress appropriates, for example, $1,000,000 for a specific land acquisition project and the acquisition is actually made for say $950,000.

045. Question: What happens to the balance of $50,000?

Answer: The balance is reprogrammed to other land acquisition purchase priorities (reprogramming of $100,000 or more requires Congressional notification) as well as to other cases where the purchase price may exceed the specific amount appropriated for those tracts.

046. **Question**: Would it not be appropriate for the Committee to adopt a policy that all such surplus balances should be deposited in the "emergencies and hardships" account within sixty days of their availability?

Answer: The Forest Service would support such a policy.

BELOW COST TIMBER SALES PROPOSAL

Mr. Robertson, the FY 1991 Forest Service budget proposes to implement a below-cost timber sale pilot test. The test proposes to evaluate the implications of phasing out certain below cost commercial timber sales on national forests and to determine whether the loss in local economic activity and payments to counties can be offset through expansion of recreation.

047. **Question**: How many forests are affected by this proposal? What are they? Where are they located?

Answer: Twelve (12) proclaimed National Forests administered as nine (9) administrative units.

REGION	NATIONAL FOREST	STATE
Region 1	Beaverhead	Montana
Region 2	Arapaho and Roosevelt	Colorado
	Pike and San Isabel	Colorado
	White River	Colorado
Region 8	Chattahoochee	Georgia
	Cherokee	Tennessee
	George Washington	Virginia
Region 9	Wayne-Hoosier	Indiana/Ohio
	Shawnee	Illinois

048. **Question**: Did the Forest Service propose this test, or was it directed by others in the course of the budget formulation process?

Answer: The test was directed by OMB in their FY 1991 Passback instructions.

049. **Question**: What involvement did the Forest Service have in the selection of the forests included in the test?

Answer: The Passback included a list of 11 test forests. During the negotiations on the budget, some units were dropped and others substituted.

050. **Question**: What basis did OMB use for selecting these particular forests? Were other forests considered?

Answer: The criteria cited in the President's Budget include:

- In reasonable proximity to population centers
- Have experienced rapidly increasing demand for recreation
- Strong ability to support economic activity other than logging (e.g., the communities in which they are located are not entirely dependent of timber and have the ability to diversify).

Other forests considered:
Additional forests listed in original OMB passback are:
Rio Grande NF, Colorado (The White River was substituted)
Oconee NF, Georgia (Dropped as it was "above costs".)
North Carolina NF, NC (Dropped)
Mark Twain NF, Missouri (Dropped)

051. Question: Have the land management plans for all of the selected forests been finalized and implemented? When will the ten-year review and update of the affected plans occur?

Answer: All plans are finalized and are being implemented.

Each plan must be revised within 15 years of its completion. We require a formal review of plan implementation to occur in the 5th year of implementation. This review, plus the annual monitoring that occurs by the Forest, identifies the need for amendment of the Plan. Completion dates of the individual forests were:

Beaverhead	1986
Arapaho and Roosevelt	1984
Pike and San Isabel	1984
White River	1986
Chattahoochee	1985
Cherokee	1986
George Washington	1986
Wayne-Hoosier	
Wayne	1988
Hoosier	1987
Shawnee	1986

052. Question: Doesn't the below cost proposal represent a significant departure from these plans? Do you propose to amend the final plans for these forests?

Answer: Carrying out a reduced sale program through the life of the plan would be a significant departure. Implementation schedules would have to be changed through amendments to the plans whether or not the test leads to reductions in the commercial timber programs. Temporary reductions in the commercial timber programs would not have any substantial effects on achieving the 10-year goals and objectives of the plans (certainly for 1 year and perhaps for 2 or even 3 years). This means the amendments would be "non-significant" during the proposed life of the test.

So long as these amendments were made in response to "adequately specific" statutory direction, they can be thought of as bookkeeping adjustments, as they would not be subject to challenge. In the absence of such direction, challenges would not be troublesome unless reductions in the program were "large" (as on the Beaverhead) National Forest. The argument could be made that such reductions (even for 1 year) changed the goals and objectives of the plan. Without "adequately specific" statutory direction, there is a substantial chance we would be forced into a significant amendment or revision.

Other than the "non-significant" schedule changes, we do not propose to amend Forest Plans. We would review that decision at the initiation of any and each additional test years.

053. Question: What are the estimated costs associated with revising, or amending, these plans?

Answer: The costs of amending the timber sale schedule is very minor. We do not yet have any experience at revising Forest Plans, so, do not have any cost assessments.

If the test were to continue beyond one to three years and significant amendments were needed, we know the costs will vary by individual forest situation. We have experienced costs in the several hundred thousand dollar range on forests that have addressed significant environmental effects in revising the NEPA document. This is likely to occur on those forests with large reductions in their timber goals *if* "adequately specific" statutory direction is not provided.

054. Question: Did any of the selected forests involve negotiated settlements in finalizing their forest plans?

Answer: Yes, two - the Cherokee and the Shawnee National Forests.

055. Question: How will this proposal affect those settlements?

Answer: The appeals involved several issues other than the Allowable Sales Quantity which are not affected at all. With regard to Allowable Sales Quantities, the proposal would not require either forest to violate the standards and guidelines laid out in the plans. The plans indicate which areas in the forests may be managed for timber production and lay out an approximate schedule of sales offerings. It is important to bear in mind that the Allowable Sales Quantity is a maximum decadal volume. It is not a minimum. There is no guarantee that the full amount will be offered for sale. Just as the Administration is not required to offer the Allowable Sales Quantity, the Congress is not required to provide funding to meet the quantitative output targets for the sundry programs on each forest.

In Intermountain Forest Industry Association v. Lyng, 683 F.Supp. 1330 (D Wyo. 1988), the Court, in denying a motion for a preliminary injunction, held that the Timber Management Plan harvest program did not have the force and effect of law and a court could not order the Secretary to offer timber for sale in the target quantity stated in the Timber Management Plan. The judge relied in part on the NFMA planning regulation definitions of goals and objectives. If the below-cost sales initiative is continued for several years, the plans for the two forests would probably have to be amended or revised, but this would occur even if the plans had never been appealed and settlements negotiated.

056. Question: Doesn't such a proposal represent an abrogation of those negotiated settlements?

Answer: Although it may create the appearance of abrogation, the negotiated settlement of the appeals did not create a legal requirement to meet quantitative output goals for the timber sales program or for any other activity, nor did the settlements confer special preference on the activities appealed over other objectives in the plans. The planning regulations recognize that the allocation of funding resources is a complex matter involving policy decisions on the part of the President and the Congress which over time may not comport with the plans, including any changes made in settlement of appeals. The regulations provide for amendment or revision of the plans accordingly.

057. Question: In determining the forest to use in the test, what consideration was given to the non-cash flow aspects of the Timber Sale Program Information Reporting System--namely, the economic, and employment and income reports?

Answer: The principal focus was Report 1. FS data underlying the economic and employment and income reports has then been used to project potential effects on employment and incomes for each selected forest. The methodology is the same as was used in the TSPIRS reports. These projections capture both the negative effects on the existing timber jobs and positive effects on the potential recreation jobs.

058. Question: What is the estimate of jobs that will be lost as a result of the test?

Answer: Preliminary estimates are a slight increase in total jobs. Timber jobs are expected to decrease 352 the first year and 1,141 by the fifth year if the test continues. Recreation jobs are expected to increase to more than offset this loss.

059. Question: What assumptions have been made about job substitution as particular locations shift to a greater recreation emphasis? Is it assumed that the displaced timber workers will begin new careers in the recreation arena? Explain.

Answer: No specific assumptions have been made about job substitution at particular locations. It is likely that some timber workers will not want to work in the recreation field and will seek timber work in other locations. Other timber workers may wish to remain in the area and work in the recreation field.

060. Question: What is the effect of the proposal on timber supply? What other sources of supply exist for each forest in the test? What volumes were available from those sources over the last three years? How will mill owners be able to survive without supply? How will they be able to make payments on their equipment?

Answer: The effect of the test on timber supply would vary depending on the local circumstances, including: proposed reductions in National Forest timber sales under the test, how long the test would be continued, and existence of alternative sources of timber supply.

If there are no or insufficient alternative sources of timber supply in an area, and timber supply from a test National Forest is substantially reduced for a number of years, dependent mills are likely to go out of business. The test forests in the West (Regions 1 and 2) generally have no, or very limited, alternative sources of timber supply. Alternative sources of supply are much more abundant in the East and South (Regions 8 and 9). However, even on the test forests in Regions 8 and 9, some mills are 50 to 80 percent dependant upon National Forest timber. This is true of the Chattahoochee, Cherokee, and others.

Some National Forests, such as the Shawnee and Wayne-Hoosier, produce high quality hardwoods that are not available on private lands. However, on these two Forests, timber supply would not be substantially affected by the test.

061. Question: What are the increased recreation opportunities that you envision as a result of the test? What investments will be required? How many jobs are involved? How will the salaries of the recreation jobs compare with current timber-related employment?

Answer: We anticipate providing better camping facilities such as rehabilitated and improved campgrounds, electricity, and showers in some locations, better facility maintenance, a few new facilities, and improved trail maintenance. We also plan to increase interpretation of the forests and wildlife for the recreationists and to improve the information provided.

We plan to invest $10 million the first year, with $2.5 million in construction of new facilities and $7.5 million for increased maintenance and services.

We estimated between 360 and 570 new jobs would be involved the first year. Timber jobs are often higher paying than recreation.

062. Question: What effects do you forecast for payments to counties located within the boundaries of the test forest?

Answer: We expect payments to counties to decrease slightly ($244,000) without new fee authority and to increase slightly with new fee authority.

063. Question: How do you propose to evaluate the test? What will constitute success or failure? When will the evaluation occur? At the end of this year?

Answer: We will evaluate the results in two areas: (1) monetary impacts to the Federal treasury and (2) socio-economic impacts to neighboring communities. TSPIRS report number 1 will be used to measure changes in timber expenditures and receipts. Changes in recreation expenditures and revenue would also be measured

Short-term economic impacts to communities and counties will be measured using the IMPLAN model. Rural community-specific impacts will be determined by obtaining data from local businesses and Forest Service recreation service partners and contractors. Success in new job opportunities for displaced workers would be measured.

The evaluation will occur at the end of the first year and at the end of the test.

064. Question: What are your future plans with respect to the proposal? Will it be expanded prior to evaluation, which is not likely to occur for 3-5 years?

Answer: The budget proposal is for FY 1991. It does not specify any plan for the future. If the proposal is agreeable to the Congress, it is likely that the test will be continued for three to five years. There are no present plans to expand the test prior to evaluation.

As part of the proposal, the Forest Service has indicated that below-cost sales can continue to occur if their primary objective is intended to produce non-timber benefits. In such instances, the benefitting program is to pay the costs of the timber sale.

065. Question: What is the current percentage of the Forest Service timber program that is identifiable as benefitting non-timber values? What are the costs associated with these sales?

Answer: Based upon our FY 1989 Timber Sale Program Information Reporting System (TSPIRS) data, about 2% of the total timber sale program was specifically identified as being for other resource purposes. This equates to about $15,534,420 of the total costs. We expect this percentage to increase somewhat as the importance of these sales on other values is more closely evaluated.

066. Question: How are these sales presently accounted for? Are they paid for by timber, or other programs?

Answer: These sales are accounted for as part of the total timber sale program in TSPIRS. All of these sales are paid for by timber dollars.

067. Question: When the primary purpose of a sale is timber, but it produces non-timber benefits, are those non-timber aspects taken into consideration when determining whether a sale is below cost? What happens if costs and benefits are not equally quantifiable for all three TSPIRS reports?

Answer: Only the costs and revenues displayed in the TSPIRS Statement of Revenues and Expenses are used to determine whether a national forest is "below cost" or "above cost". If costs and benefits are not equally quantifiable, we make our best estimate. We are working to update and refine our process to produce the best information that we can. TSPIRS is a new approach to monitoring timber program costs and we are learning as we implement.

I understand that the Forest Service has an internal task force looking at alternative approaches to reducing below cost sales and improving the efficiency of the timber program Service-wide.

068. Question: What is the timeframe for this task group to complete its work?

Answer: The task group should have a completed report on its findings by July 1, 1990.

069. Question: Why propose yet another test before this, and other special working groups, complete their review and make recommendations?

Answer: The President's Budget reflects concern with below-cost sales. The proposal will expand the test to more areas and will evaluate actual results of reducing the sale program and expanding the recreation program.

070. Question: What can be done to reduce your costs? To what do you attribute the spiraling costs of the timber program?

Answer: There are several ways that an individual national forest can pursue to reduce any inefficiencies in their timber sale program. At a minimum, Forests can examine opportunities to reduce timber related costs and increase revenues through design of more efficient sale packages and review every opportunity to make appropriate organizational changes in timber program staffing and support at all levels.

All direct and indirect costs of the timber sale program have been increasing in recent years. Costs to support GIS, land management planning, appeals resolution, settlement of litigation, and public involvement have substantially increased with no increases in the associated volumes. However, the costs of satisfying NEPA and NFMA requirements in order to comply with the preparation of environmental assessments as directed by appeals and litigation are increasing at a higher rate than most of the other costs associated with the timber sale program. Forests have seen these costs increase at rates of 25-40% in the past year.

071. Question: What percentage of the total timber sales program was spent at the district, forest, regional, and national level in FY 1989? How does this compare to 1985? Please provide detail for all budget line-items, both dollars and percentages, at these different organizational levels for those two years.

Answer: The only source for accounting for our actual expenditures of the timber sale program is the TSPIRS data. TSPIRS only tracks dollars at the Forest, Region, and National level. Of the total expenditures for the timber sale program in FY 1989, 86% were spent at the Forest level, 10% at the Regional level, and 4% at the National level. Precise information is not available for FY 1985 because TSPIRS was not in place at that time. However, the Forest Service has made major reductions in its workforce Service-wide since about 1980. More than likely, in FY 1985, the percentage of expenditures at the National level was higher than they currently are today.

Part of your proposal would involve the imposition of additional recreation user fees. We have yet to receive any specifics regarding the content of this proposal.

072. Question: When can we expect to receive your legislative proposal?

Answer: The legislative proposal for increased fee authority has been prepared and is undergoing inter-agency review at this time. It should be submitted to Congress in the near future.

073. Question: What interaction have you had with user groups regarding some of the fee concepts, such as wilderness admission fees and forest parking fees?

Answer: The test forests have been instructed to involve local residents and user groups in discussing the expanded fee proposals. As a result of this involvement some forests have modified their original test fee proposals. The Wilderness Society has expressed support for a wilderness entry fee.

074. Question: What analysis has been done to estimate the anticipated fee revenue and the costs to collect those fees?

Answer: Each test forest has estimated the anticipated increase in revenue by category and the cost of collecting the fees. No fees are to be implemented where the cost of collection would exceed the revenue.

075. Question: Is your assumption that the fees generated on a particular forest remain on that forest, after the payment to counties?

Answer: Generally, yes, but this would be subject to appropriations. The proposed fee legislation also provided for the special-use receipts to be available to the Secretary. In some cases, all of these receipts may not be available on the forest where generated. An example of this is a large winter sports forest which could generate receipts far in excess of what could efficiently be used on that particular forest; therefore, the Regional Forester may elect to distribute a percentage of those receipts to other forests in the same region. There are probably only a few instances where this exception would apply.

SPOTTED OWL

Mr. Robertson, earlier this month, the Interagency Scientific Committee released its study of the spotted owl and made recommendations regarding the habitat requirements to ensure a viable spotted owl population in the Pacific Northwest. The analysis includes many different assumptions about the owl and its habitat requirements.

076. Question: How do the recommendations of the Interagency Scientific Committee differ from current Forest Service management guidelines in place for protection of the spotted owl?

Answer: Current Forest Service management guidelines protect individual pairs of owls in a network of Spotted Owl Habitat Areas (SOHA's) ranging in size from 1000 to 3500 acres/pair. The Interagency Scientific Committee found that this strategy was inadequate to maintain long term viability of the owl. They recommend a strategy of protecting bigger habitat conservation areas, each capable of sustaining 20 pairs of owls.

077. Question: What process is now in place for assessing the study, the impacts of its proposals, and evaluating the considerations not addressed by the scientists?

Answer: We have several teams assessing the study and the impacts of the proposal. We are considering the recommendations of this report in reviewing our December 1988 decision on management of the spotted owl habitat. The results of these evaluations will be used in revising this decision by September 30, 1990.

078. Question: The study indicated that the habitat conservation areas drawn on the maps were the tenth iteration. Why are the proposed areas any better than the first nine iterations? What would be produced if ten more iterations were attempted?

Answer: Because of patchiness of suitable owl habitat, location of existing wilderness areas, mixed land ownerships and uneven distribution of known owl pairs, it took 10 attempts of applying the conservation strategy guidelines to actual lands as they are found on maps to locate the areas. The proposed areas best meet the conservation strategy guidelines. The first nine attempts did not meet the guidelines as well; additional attempts would not significantly change the outcome or location of conservation areas.

079. Question: What is the total acreage of the national forests in the Pacific Northwest?

Answer: There is a total of 24,457,000 acres of National Forest System land in Oregon and Washington. In addition, there are four forests in northern California which provide habitat for the spotted owl, with a total of 5,770,000 acres.

080. Question: Of this total, how much is presently set aside in wilderness, or other designations? How much remains in the suitable timber base?

Answer: There are 4,650,000 acres of designated wilderness areas in Oregon and Washington. Under the direction now in the draft and final Forest Plans released to date, about 12 million acres is classified as suitable for timber production. The remaining acres are unsuitable for timber production for various reasons.

There are presently 1,141,000 acres of designated wilderness in the four northern California forests. Under direction in the draft forest plans released to date plus estimates for the Klamath National Forest. There are about 2.2 million acres classified as suitable for timber production. The remaining acres are unsuitable for timber for various reasons.

081. Question: What is the estimated acreage recommended by the committee to be set aside to protect owl habitat?

Answer: Approximately 5,332,000 acres of NFS lands in Washington, Oregon and Northern California are recommended to be included in habitat conservation areas. Of this, about 1,125,000 acres are designated wilderness, 2,374,00 are suitable for timber production and the remaining acreage is unsuitable for timber production or is allocated to other uses. Approximately 50-60% of the total National Forest System acreage is currently suitable for habitat.

082. Question: What is the current allowable timber program in the region?

Answer: The current allowable sale quantity based on published draft and final Forest plans for the Pacific Northwest Region is 4.0 billion board feet. The current allowable sale quantity level for the Pacific Southwest Region is 1.9 billion board feet.

083. Question: What is your current estimate of the impact of the committee's recommendations, if implemented in their entirety, on the timber program in the Pacific Northwest?

Answer: The estimated allowable sale quantity that would result from implementing proposed final Forest Plans plus implementation of the committee's recommendations would be about 2.7 BBF (net merchantable) or 3.1 BBF gross in the Pacific Northwest, and 1.4 BBF gross in the Pacific Southwest.

The Interagency Committee dedicated itself solely to studying the science of the northern spotted owl. Its deliberations did not encompass the economic and social impacts to the region of a recommendation that would drastically alter the timber program level.

084. Question: What proposal does the Forest Service have to address these concerns?

Answer: The Forest Service has completed an interagency report with the Bureau of Land Management entitled "Economic Effects of Implementing a Conservation Strategy for the Northern Spotted Owl." We will use this report along with the interagency committee report in reviewing and revising our December 1988 decision on managing habitat for the spotted owl.

085. Question: What is the estimated job loss and economic impact associated with implementation of the committee's recommendations in their entirety?

Answer: The combined effect of implementing proposed final Final Forest Plans and implementation of the Interagency Scientific Committee report recommendations would be around 25,400. This would be partially offset by up to 12,000 additional jobs by increases in timber produced on private lands during the first 5 years.

TIMBER SALES PROGRAM

Mr. Robertson, last year at this time, you informed the Subcommittee that the Forest Service was falling behind in the volume of timber prepared for sale--commonly referred to as "the pipeline." Ideally, at the start of the fiscal year, you would have 100% of that year's program prepared and ready to offer for sale. In recent years, the Forest Service has entered the fiscal year needing to complete up to 50 percent of the work required in order to produce that year's sale offer program.

In FY 1989, Congress allowed the Forest Service to retain those timber receipts in excess of the President's Budget, to be used for a variety of commodity and non-commodity programs. Using the formula directed by Congress, approximately $29 million was available from this source to address your pipeline problem. The Forest Service estimated that the $29 million would help raise the pipeline from a level of 48 percent of field work complete to approximately 60 percent complete at the start of FY 1990.

086. Question: What progress was made on "filling" the pipeline during FY 1989? In other words, what was the level of field work complete at the start of FY 1990 for that year's sale program?

Answer: The percentage cited relates to sales through Gate 3. In this sense, the program fell from 48 percent to 30 percent. Progress to accelerate the pipeline has been made difficult by continued appeals and litigation. In FY 1989, we made little progress to accelerate the pipeline as we continue to revisit previously prepared timber sales to incorporate new decisions and information into the design of the timber sale. Changes have been made for:

Grizzly bear, Spotted owl, and Red Cockaded woodpecker habitat classification and coordination;
Decisions which redefine standards and guidelines;
Mitigation of cumulative adverse effects caused by accelerated harvest on private land created by shortages in timber supply and a strong market.

087. Question: What happened to the funds provided for the pipeline in FY 1989? Were they used for other purposes?

Answer: The FY 1989 Excess Receipts funds did not reach the regions until early summer of 1989. About 50% of the funds were obligated in FY 1989 and used mostly to prepare sales early in the pipeline (Gate 1, Inventory and Gate 2, NEPA Decision). These gates are the initial steps that must be taken in order to establish that a timber sale is feasible. Until the final NEPA documentation is completed, no field preparation work can take place. Since the funds were late in getting to the forests most of the work accomplished did not result in sales that were fully field prepared. Timber sales accomplishments for the pipeline are not reported until they are fully field prepared. None of the pipeline funds were used for any other purpose.

088. Question: Did you propose a reprogramming before reallocating these funds? Why wasn't the Committee informed?

Answer: We have not made any request to reprogram these funds and do not intend to do so. As we have done in the past, we will notify the committee of any need to adjust funding.

Not only did the Forest Service not make any forward progress in addressing the pipeline problem, but it fell further behind -- from 48 percent complete at the start of FY 1989--only 30 percent complete at the start of FY 1990 -- despite receiving an additional $29 million from the excess receipts.

089. Question: Where is the accountability, Chief? What has happened to these funds?

Answer: We intend to measure these required accomplishments using the STARS Report 35 for all of the volumes that have passed through gate 2 (completed NEPA documents) and gate 3 (completed field work) as of September 30, 1990. We will compile this data in the Washington Office to measure not only the amount of volume added to the pipeline, but will also use the information as a measure of the performance of all line officers for the Fiscal Year Timber Sale Program. As stated previously, these funds were allocated to the regions and are not to be spent on other resource activities.

090. Question: Were you able to offer all of your program in FY 1989?

Answer: No. We offered 10.5 billion board feet. Our target was 11.5 billion board feet.

091. Question: How much of the FY 1990 program of 11.1 billion board feet has been offered to date? What are your plans for the rest of the year?

Answer: We have offered about 40 percent of the total FY 1990 program through March 31, 1990. We plan to offer the balance of the program by the end of the fiscal year.

RESEARCH
CHALLENGE COST SHARE PROGRAM

092. Question: What funding is proposed in the budget for this program in FY 1991? How much was available in FY 1990?

Answer: In FY 1990, the Research Challenge Cost-Share program was funded at $500,000. In FY 1991, that program will continue to be funded at $500,000.

093. Question: How many different research cost-share projects were proposed in FY 1990? How many were actually funded? What level of matching funds were offered by contributors?

Answer: Forty three cost-share projects were proposed in FY 1990. Sixteen projects were funded for a total of $491,000 of Federal funds and $600,500 in matching funds.

094. Question: What is the scope of research projects to which cost share funds are applied? How are the priority selections made? Are cost-share projects limited to the priority research areas only?

Answer: The cost-share projects include research studies on topics such as wildlife, disease, water quality, timber, genetics, fish, and newspaper recycling. The projects were evaluated on the basis of availability of matching funds, relevancy to Forest Service mission, benefits expected, degree of new partnership development, and scientific merit. Although the cost-share projects were not required to address priority research areas, many of those selected fell into those areas.

LONG TERM STRATEGIC PLAN

095. Question: On pages 3-5, the explanatory notes discuss the long-term strategic plan for the research program. What is the status of the plan? What are its objectives? What are the cost estimates associated with attainment of the objectives?

Answer: The long-term strategic plan is currently out for review by users, other agencies and interest groups. The plan will be revised and finalized by about mid-June. The objective of the plan was to set general direction for programs in the 90's. The plan establishes broad areas of future program emphasis, but does not include cost estimates.

096. Question: Who was involved in its development? Is there any integration of the research objectives and the land management plans? What role does State and Private Forestry have in the review of long-term research goals?

Answer: The Deputy Chief for Research, the Associate Deputy Chiefs for Research, Station Directors and Research Staff Directors were all heavily involved in preparing the document. Research needs from the land management plans were considered in its preparation. State and Private Forestry provided a detailed review of the plan and will be involved in periodic revisions of the plan.

097. Question: How does the FY 1991 budget proposal for research fit in with the long term strategic plan? Does the strategic plan propose reductions in the foundation research program?

Answer: The national long-term strategic plan addresses general program direction and does not develop budget data. The plan recognizes and supports the foundation program. Many studies in the foundation program must be maintained and or increased if we are to answer critical problems of the future.

FOUNDATION RESEARCH PROGRAM

098. Question: In proposing the reallocation of the FY 1990 program, an emphasis on the acceleration of studies that can be completed, so that research on certain topics can be reduced or terminated efficiently. What projects will be accelerated? Where are they located?

Answer: It is our intention to provide as orderly and as efficient a transition to the new program priorities represented by the President's Budget as is possible, consistent with the funding levels appropriated by the Congress. Research labelled 'Restore' on the Capability Increase List is research underway in FY 1990 that would be ceased or terminated in the most efficient way possible under the President's Budget. Decisions such as this are normally left to Station Directors and project leaders responsible for orderly and efficient planning and execution of research.

099. Question: What are the costs to accelerate completion? Will all completion occur this year? What assumptions have you made regarding the future of the affected scientists and support personnel?

Answer: Our intent is to focus available appropriated funds on completing studies that would normally draw to a close in the next year or two, which would otherwise be abandoned or delayed by reductions in funding. Our assumptions on personnel are that people in work units merged or terminated will face reassignment, outplacement, or, as a last resort, RIF. In other work units, funding reductions will not imperil salaries, although operating funds may be tighter.

RESEARCH STAFFING

100. Question: In explaining the FY 1991 research proposal, a total of 90 new positions are created, while 80 others are reassigned. Does this mean that the program assumes 170 new positions in support of the priority research programs?

Answer: Yes, there will be a need for an additional 170 positions dedicated to the priority research programs contained in the FY 1991 budget proposal. However, not all of these positions would be considered new hires above current staffing levels. Staff reductions of 120 are associated with the decrease in funds for the foundation research programs.

101. Question: Please explain the different staffing adjustments for each research activity. The explanatory adjustments identify 170 positions to be eliminated, 26 positions to be reassigned, and 125 positions to be added, for a net change of 19 fewer positions. Yet the research FTE level decreases by just 1 FTE from the FY 1990 level.

Answer: A position is a personnel slot for an individual, which may or may not be occupied for all or part of a fiscal year. An FTE is 12 person-months of work. Thus, eliminating a slot is not the same as eliminating an FTE. For example, if a vacant position exists for 6 months before a person is hired for it, we have one position, but only 0.5 FTEs. The normal situation is to have a larger number of positions than FTEs to provide some flexibility in hiring and moving people around within the organization. Because the number of positions is declining more than the number of FTEs, we are giving up some of our flexibility by eliminating positions that have remained unfilled for longer than a year due to constrained funding levels.

102. Question: What is the total workforce assigned to the priority and foundation research programs, FY 1889-91?

Answer: Approximately 650 FTEs of work was performed on priority research programs in FY 1989 and 825 FTEs in FY 1990. About 1,050 FTEs are projected for priority research programs in FY 1991 under the funding levels proposed in the President's Budget.

GLOBAL CLIMATE CHANGE

103. Question: An increase of $23 million, or 42.8 percent, is proposed for global climate change research. The funding allocation among the various scientific elements appears to be pro-rata. Are all of the various elements of equal scientific value? What are the priorities for the global climate change program?

Answer: The proposed $23 million for Global Change Research is an increase of $6.1 million over the FY 1991 Base. The United States Global Change Research Program (USGCRP), as developed by the President's Committee on Earth Sciences (CES) for FY 1991 is founded on seven science elements. They are, in descending order of priority:

1. Climate and Hydrologic Systems
2. Biogeochemical Dynamics
3. Ecological Systems and Dynamics
4. Earth System History
5. Human Interactions
6. Solid Earth Processes
7. Solar Influences

The Forest Service Global Change Research Program includes only the five highest priorities among the seven above listed CES science elements. The Forest Service program focuses heavy attention on the Ecological Systems and Dynamics CES science element because it is that area of global change that is most important to understanding potential impacts on forests. The interagency CES review process allocated major responsibility to the Forest Service to cover Ecological Systems and Dynamics, and that was recognized by the Office of Management and Budget (OMB) in the allocation of budget responsibilities. Because forest ecosystems must be studied at regional or smaller scales, we have subdivided our Ecological Systems and Dynamics program into four regional subcomponents. Our proposed funding for Ecological Systems and Dynamics is $16.6 million; for Climate and Hydrologic Systems it is $2.1 million; for Biogeochemical Dynamics it is $2.8 million; for Earth System History it is $0.3 million; and for Human Interactions it is $1.2 million. This distribution demonstrates a high degree of prioritization. We have prioritized the Forest Service Program within the overall U.S. Program; and then prioritized that Forest Service contribution to heavily emphasize regional Ecological Systems and Dynamics.

104. Question: How was the decision regarding the overall funding level for the global climate change research program reached? How much funding did you request from the Department? From OMB? How does the FS funding fit in with the priorities of the committee on Earth Sciences?

Answer: The President's Committee on Earth Sciences (CES) process used interagency peer review to determine scientific priorities and recommend Agency budgetary participation based on those priorities for five proposed funding levels. Depending on the overall United States Global Change Research Program (USGCRP) funding level chosen, the Forest Service Program could have been allocated from $23 million to over $40 million. The Office of Management and Budget (OMB) chose a CES funding level option that allocated $23 million to the Forest Service.

The USDA budget process proceeded in parallel. The Forest Service request to the Department of Agriculture included $19.7 million for global change research and requested an additional $20 million as a new initiative. Our request to the Department paralleled the priorities and amounts being considered in the CES process. The Department requested $19.7 million from OMB and did not formally include our requested $20 million for a new initiative.

The Forest Service Global Change Research Program and priorities are:

1. Entirely consistent with, and contained within, the CES U.S. Global Change Research Program.

2. The Forest Service and overall CES Program have been submitted to an unprecedented level of interagency review and coordination.

3. The proposed Forest Service Program places heavy emphasis on the CES Ecological Systems and Dynamics science element, and lesser emphasis on four other CES science elements. Two CES science elements are not covered by the Forest Service Program.

105. Question: What is the total Federal funding for global climate change research, by agency, for FY 1989-91?

Answer: The Forest Service does not have the budget information for other Agencies and Departments you request. We do know that the approximate amount proposed for the total U.S. Global Change Research Program is about $1 billion, up from approximately $660 million in FY 1990. A large amount of the proposed increase went to the National Aeronautics and Space Administration (NASA) for space-based programs. We also know that the Department of Agriculture's portion of the total program is approximately $47 million.

Forest Service Global Change Research Program funding is as follows:

FY 1989	$13.8 million
FY 1990	$16.7 million
FY 1991	$23.0 million

WATER QUALITY

106. Question: The explanatory notes indicate that the Department of Agriculture wants the research agencies to institute a coordinated plan to fill key information and technology gaps. What is the status of this plan? How were the contributions or suggestions of the different agencies evaluated? What is the total cost of the plan?

Answer: The Forest Service Water Quality Priority Research Plan is part of the coordinated USDA Water Quality Research Plan. Both plans are being implemented as funds become available. The Forest Service component of the USDA plan is not funded in the President's Budget for Department of Agriculture agencies.

Agency contributions to the USDA plan were developed by a joint USDA committee with representation from each agency. Other USDA agencies are included in the President's Budget and funded through the Agriculture, Rural Development, and Related Agencies Subcommittee of the Senate Appropriations Committee. The Forest Service is seeking funding for its contributions through the Interior and Related Agencies Subcommittee of the Senate Appropriations Committee.

The proposed Forest Service contributions to the USDA plan will total $2,700,000. The USDA total is $77.0 million.

107. Question: How does the Forest Service piece fit in? What is the total USDA budget, by agency, for water quality research, FY 1989-91?

Answer: The USDA Water Quality Research Plan proposes research to understand the fate of agricultural chemicals in ground water systems. These ground water systems are associated with intermixed forest and cropland components of landscapes. To understand the fate of chemicals in these systems, we need to address contributions from both components. Our ability to deal effectively with chemical pollution can be substantially enhanced by taking advantage of the mitigating influences of the forest component.

The Forest Service research budget for contributions to the USDA Water Quality Plan allocated $50,000 to these purposes in 1989 and 1990. The President's Budget for Forest Service Research has proposed $100,000 in 1991. The following chart shows the USDA agencies' budgets for FY 1989 through FY 1991:

	1989	1990	1991
	(dollars	in thousands)	
Agricultural Research Svc	30.00	37.50	44.90
Coop State Research Service	19.50	24.80	30.30
Economic Research Service	.80	1.10	1.70
Forest Service	.05	.05	.10
Total	50.35	63.45	77.00

THREATENED, ENDANGERED AND SENSITIVE SPECIES

108. Question: What research needs have been identified for the red-cockaded woodpecker as a result of the devastation from Hurricane Hugo?

Answer: Hurricane Hugo destroyed both nesting and foraging habitat for the red-cockaded woodpecker on the Francis Marion National Forest. Previous research had developed technologies for creating nesting habitat by installing artificial cavities in younger trees, so the Forest Service was able to immediately implement a program to mitigate some of the losses in nesting habitat. New research efforts will (a) determine if artificial cavities are as effective as natural cavities for roosting and reproduction, (b) develop methods for protecting remaining nesting habitat against damage from insects and diseases, (c) develop methods for reducing inter-specific competition for cavities, and (d) determine how the woodpeckers will respond to reduced and damaged foraging habitat.

109. Question: The budget proposes to allocate $392,000, or 91 percent, of the proposed increase, to threatened, endangered, and sensitive plants. This would leave the plant category with 6.8% of the total research funds for threatened, endangered, and sensitive species. Why are funds being added for threatened and endangered plants for the first time in FY 1991?

Answer: Previous research on threatened, endangered, and sensitive species (TES) has emphasized terrestrial vertebrates. This is because these species tend to have larger ranges. This wider distribution coupled with their mobility increases the probability the species could be impacted by management activities for other resources. We recognize, however, that plants have received much less emphasis than animals despite the fact that they now constitute 39% of the current TES listed species. The FY 1991 President's Budget clearly establishes a research program response for plants.

110. Question: Have you done a comprehensive review of the total research needs for threatened, endangered, and sensitive plant species? What are they? Why are plants receiving such a low percentage of this portion of the research budget?

Answer: This past year a national task force was organized to assess both the management and research needs related to threatened, endangered, and sensitive species. A Priority Research Program was also developed for threatened, endangered, and sensitive species. Both planning exercises identified the need to increase the emphasis on plants. The Southeastern Forest Experiment Station was the first field unit to complete a comprehensive assessment of plant research needs, and funding ($300,000) to study threatened, endangered, and sensitive plants associated with the longleaf ecosystem is included in the President's 1991 budget. Other Stations are currently assessing the plant research needs in their respective regions, and these needs will be reflected in future budget requests.

RESOURCE ANALYSIS RESEARCH: INVENTORY

111. Question: One of the responsibilities of the research program is to inventory the extent, conditions, and ownership of our nation's forest resources. What is the present inventory capability--how often is the inventory updated for each state? Is it the same for each state? If not, why not?

Answer: Our present inventory capability, based on accomplishments in FY 1989, is to update state inventories on a cycle that averages 10 years nationwide. The cycle for individual states ranges from 6 years in the Southeast to 18 years in the North Central region. The cycle varies from year to year based on the area covered by our employees in the field. There are several reasons for this difference: (1) there is a need to conduct inventories more frequently in the South because growth rates are rapid, rotation lengths are short, and the timberland base undergoes rapid change; (2) it is more difficult to conduct inventories in some states, for example, states having remote forest lands with poor access; (3) regional research efforts have resulted in inventory technologies that are more efficient in some regions; and (4) inventory projects have different numbers of states to work with and varying degrees of involvement with National Forest inventories and other Federal agencies, which results in different overhead costs for planning and coordination.

112. Question: What happens to the inventory cycle in FY 1991 since the budget proposal for resource analysis research decreases 7 percent from the base level?

Answer: Within the resource analysis research budget, funding for forest inventory declines 11 percent. Nationwide, the average inventory cycle will increase from 10 years to 13 years. The impact will vary by region, from an additional 1 year in the South Central region to an additional 6 years in the North Central region.

113. Question: What funding is allocated for inventory work, FY 1990-1991? What is the average cost per acre? How does this compare to previous years? Are inventory costs changing more in some parts of the country than in others?

Answer: The Forest Inventory and Analysis work units received $13.2 million in FY 1990 and will receive $11.7 million in FY 1991 under the President's budget. The average cost per acre of forest inventoried in the U.S. is $.17. Over the long term this cost has declined. Inventory costs are declining nationwide through application of new, more efficient inventory techniques; however, demands for information about noncommodity forest resources are increasing, offsetting some of the cost savings. Inventory costs fluctuate from year to year in each region because as funding levels change, economies of scale become important. Also, turnover of field personnel is quite variable, resulting in changing levels of expertise and efficiency. Finally, some states are much more difficult to inventory than others, which affects production. For these reasons, it is impossible to compare current trends in inventory costs by region.

114. Question: Given current supply and demands for wood products, doesn't it make sense to have as accurate an inventory as possible, particularly as alternative supply sources are explored?

Answer: We have established accuracy standards at the state level that are generally accepted as sufficient for planning purposes. Improving accuracy through increased sampling intensity would require exponentially increasing costs. There is often a need for more accurate inventory information at the county level. In those cases the states or other private cooperators usually contribute to the inventory effort. We are attempting to provide more accurate information for specific, smaller geographic areas through research in sampling, remote sensing, and geographic information systems.

115. Question: What impact will eliminating remote-sensing applications have on the inventory cycles?

Answer: Eliminating remote sensing research will seriously restrict the future application of this technology to the inventory process. The inventory cycle can be maintained only through continued increases in productivity that offset rising costs for equipment, vehicles, employees, and supplies.

RECREATION RESEARCH

116. Question: One of the functions of the research program is to conduct outdoor recreation research on better methods of managing recreation and wilderness resources. The budget also contains a below-cost timber sales proposal that includes an emphasis on recreation. Given that the resource analysis research budget is decreasing by 7 percent, how do you reconcile these two apparently divergent components of your budget? Wouldn't it make sense to emphasize recreation potential and opportunities consistent with the below-cost proposal?

Answer: The President's budget maintains the recreation research component of the resource analysis research budget at the Fiscal Year 1990 appropriation level. The trial program proposed in the President's budget to link recreation fees with actions affecting below cost timber sale programs on 12 National Forests does not include any provision for funding recreation research. If the trial proves successful and is extended, there may be implications for recreation research which will be addressed at that time.

ADMINISTRATIVE COSTS

Please explain the fluctuations in the following object class categories:

117. Question: Object Class 21 (travel & transportation): Increases 6.8 percent from FY 1989 to FY 1990, but then decreases 23.8 percent from FY 1990 to FY 1991. Why?

Answer: The increase of 6.8% in FY 1990 is to cover some of the added travel costs associated with the additional 145 FTE's. In FY 1991 our total Research budget was reduced by $3.3 million from the base while the salary and benefit costs will increase to a greater degree than allowed in the base calculation. These factors had to be absorbed within other object classes over which we have some degree of discretion, such as, travel, communications, utilities, supplies, material and equipment.

118. Question: Object Class 23.1 (rental payments to GSA): What accounts for the 8.3 percent decrease from FY 1989 to FY 1990? Did the Forest Service occupy less space or did costs decline? What will be the costs associated with occupying the Auditor's Building? Are these reflected in the budget?

Answer: Estimates for rental payments to GSA are derived by the Office of Finance and Management and are based on projections set up by the Management Council Costs Distribution Program (Green Book). The Department estimate for FY 1990 which includes the Auditors Building is less than FY 1989. The contract for the renovation of the interior of the Auditors Building was administered by the National Capital Region of the General Services Administration (GSA). We do not have the costs related to the renovation contract.

119. Question: Object Class 31 (equipment): Research equipment purchases are proposed to decline 23.8 percent in FY 1991. How do you propose to accommodate the emphasis on priority research projects while decreasing your equipment budget? What is the current priority list for new and replacement equipment needs. How is the list established?

Answer: As with the case with travel expenses, the decrease is due to a reduction in non-salary and benefit funding.

120. Question: Object Class 41 (grants and contracts): The actual level presented for FY 1989 is $505,000. For FY 1990, the explanatory notes provide an estimate of $10,045,000 and for FY 1991, the estimate is $11,017,000? What accounts for the dramatic increase since FY 1989? Why are these expenses increasing by nearly 10 percent from FY 1990 to FY 1991?

Answer: Based on historical data from FY 1986 to FY 1988, object class 41 (grants and contracts) costs have ranged from $8.0 to $14.5 million. The actual for FY 1988 was $14.5 million and we estimated FY 1989 to be $15.2 million. The $500,000 shown in both the budget appendix and explanatory notes came from accounting reports from the National Finance Center that are used to produce the Treasury reports. We had to use the figures in order to balance our accounts with the Treasury trial balance. This will be an item of interest next November when we begin preparation of the FY 1992 budget appendix.

STATE AND PRIVATE FORESTRY
PEST MANAGEMENT

Surveys and technical assistance on Federal lands increased from 130 million acres in FY 1989 to an estimated 150 million acres in FY 1990.

121. Question: What accounts for the 15 percent increase? What pest outbreaks are anticipated in FY 1990 that will likely continue in FY 1991?

Answer: The expected increase is due to a major outbreak of the gypsy moth, new outbreaks of the southern pine beetle, and increasingly serious bark beetle outbreaks in drought affected areas in the West. Outbreaks of these pests are likely to continue in FY 1991. Other pest outbreaks expected to continue in FY 1991 include the western spruce budworm in Oregon and Washington, dwarf mistletoes on western conifers, and root diseases in western conifers.

122. Question: Unit costs for the Federal survey and technical assistance program increased nearly 11 percent from FY 1990 to FY 1991. How do the survey methods differ for various pests? What accounts for the higher unit costs? Why is it costing more to address the same number of acres?

Answer: Surveys are of two basic types for all pests: detection and evaluation. Detection surveys are done to discover pest outbreaks and evaluation surveys are done to assess the significance of outbreaks, extent of damage, and need for suppression. Specific detection and evaluation methods differ for each pest. For example, southern pine beetle has up to eight generations per year. For this reason, detection and evaluation surveys during southern pine beetle outbreaks are carried out every one to two weeks. For defoliators such as gypsy moth that have one life cycle per year, a detection survey is done during the summer months and an evaluation survey is done during the fall and early winter.

Surveys differ not only in frequency and timing but in the specific methods used. For example, methods for evaluating southern pine beetle outbreaks involve removing bark samples and making larval counts. Evaluation of gypsy moth outbreaks involves making egg mass counts. Additionally, the methods used for diseases are different than the methods used for insects.

The factors accounting for higher unit costs to survey the same number of acres are related to the increased cost of aerial surveillance and the cost of increased survey intensity. Detection surveys for isolated gypsy moth infestations, evaluation surveys for dogwood anthracnose and pear thrips, and the initiation of forest health monitoring all involve labor intensive procedures. In particular, forest health monitoring includes surveys for tree declines and root diseases that previously received little attention because of cost considerations. Many of these intensive surveys require permanent plots so that trends over time can be monitored. Establishing and managing these plots increases per unit costs above previous norms.

123. Question: The cooperative lands survey and technical assistance program is confronted with a similar picture--from FY 1990 to FY 1991, costs are proposed to increase by 51.8 percent while acres encompassed in the program are projected to decrease 4.9 percent. Why?

Answer: The principal factor accounting for higher survey costs is the planned expansion of forest health monitoring in the East and South. Forest health monitoring requires intensive pest detection and evaluation surveys. The initial establishment of the permanent survey plots needed to monitor pest incidence and impact trends, as well as the intensive biological evaluation surveys used to identify specific pest/host relationships are labor intensive. These activities are necessary if accurate data on forest health are to be developed. A supporting activity involves increasing detection and evaluation surveys on intermingled and adjacent State and private lands to provide Federal land managers with more complete information about pest outbreaks. In addition, surveys for isolated gypsy moth infestations are being intensified to speed up detection and to minimize the number of acres involved in eradication treatments.

In FY 1990, the Forest Service began a long-term forest health monitoring system. This was implemented in the Northeast, with the initial work occurring in New England. The monitoring program encompasses all lands--Federal, State and private.

124. Question: What is the anticipated program in support of this monitoring system for FY 1991?

Answer: Continued implementation of forest health monitoring will be a high priority for State and Private Forestry in FY 1991. Monitoring will continue in the New England states and expand to include additional States in the Northeast and Southeast. The program involves both State and Private Forestry and Forest Service Research. State and Private Forestry will detect and evaluate the effects of insects and diseases on forest health. Forest Service Research will document the condition of forest ecosystems, detect changes in condition over time, and carry out research to determine why changes occur.

125. Question: What funds are allocated to this project, FY 1990-FY 1991?

Answer: In FY 1990, State and Private Forestry allocated $440,000 in Forest Pest Management Special Project funds. In FY 1991, we plan to allocate $1 million in Federal Lands Surveys and Technical Assistance funds, $400,000 in Cooperative Lands Surveys and Technical Assistance funds, and up to $400,000 in Special Project funds.

126. Question: Is it your expectation that a forest health monitoring system will be in place nation-wide? If so, when do you anticipate that this would occur?

Answer: Yes, we envision a nation-wide system that could be in place within 10 years. If implemented on an accelerated schedule, a system could be in place in as little as 5 years, depending on the availability of State and Federal funding.

127. Question: How does this effort fit in with the strategic plan for the improvement and maintenance of forest health?

Answer: Forest health monitoring is one of the eight issues in the strategic plan and is the basis for measuring the effectiveness of the entire program over the long term.

INSECT AND DISEASE SUPPRESSION

For insect and disease suppression on Federal lands, nearly 400,000 acres were treated in FY 1989.

128. Question: Do you have an estimate at this time of the acreage likely to be treated in FY 1990? FY 1991?

Answer: We estimate that the acreage likely to be treated in FY 1990 will be around 400,000 acres. Good estimates are available for most pests. However, southern pine beetle outbreak conditions are presently worsening and, should this trend continue, suppression acreage could increase substantially before the end of the year. We do not yet have an acreage estimate for FY 1991.

No treatment estimate is provided for FY 1991, yet an increase of $2,038,000 or 12.8 percent is requested.

129. Question: What is the basis for this estimate? Where do you project that these funds will be necessary?

Answer: This estimate was made in the spring of 1989. It was based on the pest situation at that time and the historical outbreak cycles for major pests. The estimate consists of $15,008,000 for pest suppression on the forest lands administered by the Forest Service and other Federal agencies, and $3 million for unanticipated, emergency outbreaks. At that time, we projected that the $15,008,000 would be necessary for suppression of major pests including the southern pine beetle, mountain pine beetle, western spruce budworm, gypsy moth, Douglas-fir tussock moth, and dwarf mistletoes. Biological evaluations to be conducted in the fall and early winter of this year will be the basis for 1991 suppression decisions and final cost estimates.

The budget appears to indicate that increased funds are necessary for data collection, risk assessments, and responses to litigation.

130. Question: How much of the requested increase is associated with these factors?

Answer: About $75,000.

131. Question: Of the total suppression program on Federal lands, how much is spent on these activities? How have these costs changed in recent years? Please provide specifics.

Answer: Approximately $600,000 to $800,000 has been spent annually in recent years. Expenditures have tended to increase steadily over the years, reflecting higher costs for providing up-to-date summaries and analyses to forest managers on the environmental effects and risks of using pesticides, and for responding to administrative appeals and lawsuits on vegetation management and southern pine beetle suppression decisions.

FOREST MANAGEMENT AND UTILIZATION

Under the Forest Resource Management program, the funding for the traditional cooperative activities remains basically constant, but projected accomplishments decrease considerably. For example, forestry plans decrease 27.3 percent; tree planting decreases 20 percent; timber stand improvements decreases 20 percent; and timber harvest is projected to decrease 40 percent.

132. Question: To what do you attribute the decreases? Have contributed funds from non-Federal sources declined?

Answer: The 1991 base for Forest Management is $13.9 million. The 1991 estimate is $5.7 million, resulting in a decrease of $8.2 million for 1991. This represents a decrease of nearly 60 percent in funding from what was provided in 1990. The projected accomplishments reflect what can be achieved with this reduction in funding. However, the decline in accomplishments are somewhat offset by the rural tree planting component of America the Beautiful.

URBAN FORESTRY

The budget proposes a decrease of 27.8 percent from the FY 1990 level in the funds available for urban forestry.

133. Question: Why propose a decrease in this program when, as a separate proposal, a $175 million tree planting initiative is proposed?

Answer: The decrease is a result of the Administration's continuing effort to reduce the budget deficit. However, the community tree component of America the Beautiful parallels some of the traditional Urban Forestry activities, thus mitigating some of the impacts of the reduction in Urban Forestry.

134. Question: How would the tree-planting initiative differ from the existing urban forestry program?

Answer: The two programs differ in scope and size. The traditional urban forestry program provides technical support to States and local governments through State Foresters or equivalent officials and is limited in size. Currently only 25 States have Community Forestry Coordinators on their staffs.

America the Beautiful differs in scope by providing support to the numerous volunteer tree planting groups that will be necessary for the initiative to reach the goal of 30 million trees in the community forestry component. It also expands the size of the technical support element to reach more extensively into the almost 40,000 communities needed for program success. It is currently envisioned that States will have both statewide and local coalitions made up of volunteer tree planting groups, members of local governments, private sector community leaders, local arborists and members of the nursery industry, and others involved in urban and community forestry. These coalitions will combine with State and local technical specialists to prepare comprehensive plans that provide guidance and program emphasis to community leaders.

NATIONAL FOREST SYSTEM
MINERALS

The budget references an increased backlog in the processing of minerals permits.

135. Question: What was the total backlog of mineral permits needing processing in FY 1989? What is the current projection for the status of this backlog for FY 1990?

Answer: The backlog in the leasing program relates to the acreage available for leasing, not in the processing of permits. The Federal Onshore Oil and Gas Leasing Reform Act of 1987 (PL 100-203) requires the Bureau of Land Management to offer leases before applications or permits can be filed. NEPA analyses must be completed by the Forest Service prior to the BLM offering. The backlog, therefore, is the acreage pending NEPA review.

The total backlog in FY 1989 was 5,000,000 acres which was once under lease and could be re-leased if the environmental studies were complete. This backlog is expected to increase to over 6,200,000 acres during FY 1990.

136. Question: If a backlog exists, why are you proposing to decrease the budget 5.7 percent?

Answer: The 5.7 percent decrease in budget within the leasable program is the result of a shift to other priority areas within a constrained budget.

137. Question: What will be the impact on the processing of minerals permits and inspection of operating plans with the proposed FTE reductions in leasable minerals (10 FTEs) and locatable minerals (7 FTEs)?

Answer: The level of processing and inspecting mineral operating plans will be reduced with the decrease in the number of FTEs as currently proposed. The primary impacts will be delays in processing plans and consequently, delays in operator mineral exploration, development, and extraction. In addition, on-the-ground administration, including site inspections, will be reduced.

The budget contains a statement that returns for the minerals program are roughly seven times that of the program costs.

138. Question: Are all minerals costs paid out of the mineral program budget?

Answer: Program management costs are paid for out of the minerals program budget. Support activities from wildlife, recreation, engineering, etc., are generally paid for by other programs. Industry will sometimes pay for project NEPA analysis rather than wait for one or two years until the Forest Service can do the analysis.

139. Question: What portion of road maintenance and construction costs are paid for by minerals operators?

Answer: Generally, all roads that are used for minerals operations are constructed and maintained by the mineral operator.

For both the leasable and locatable minerals programs, the Forest Service monitors activities for compliance with approved operating plan requirements.

140. Question: How often are the operating plans revised?

Answer: Operating plans for ongoing development and major exploration proposals can be revised at the discretion of the operator. Plans can also be revised, when in the view of the Forest Officer in charge, ongoing operations will exceed the scope of the original NEPA analysis. Such situations require that the forest officer request an amendment to the plan.

141. Question: With what frequency are operating activities inspected for compliance with the plans? How does this compare with FY 1980? FY 1985? How does your minerals inspection program compare with that of the Bureau of Land Management?

Answer: There is no defined schedule for inspection of operations and we currently do not collect this information. Operations are inspected to the extent that resources are available.

The information to compare FY 1980, FY 1985, and FY 1990 is not available. However, as more stringent environmental regulations have been enacted, more resources have been directed to performing requisite NEPA analysis. Consequently, fewer resources have been available for field administration (site inspections). As a result, fewer site inspections are currently taking place than in FY 1980 or FY 1985.

The Forest Service and BLM differ in their approach to management of the minerals program. Comparison of the inspection programs cannot be made without reviewing the specifics of each program area. For example, the BLM developed a schedule for inspection of operations; the Forest Service did not feel the need to develop such guidelines but rather elected to require bonds on nearly all operations regardless of size. Contrary to this, the BLM does not require bonding unless the area of disturbance is greater than 5 acres in size. Bonding is viewed as a tool to obtain adherence to environmental considerations with fewer inspections.

The budget indicates (page 5-15) that for FY 1991, minerals program emphasis will be placed on "resumption of leasing in high priority areas."

142. Question: What role does the Forest Service play in the resumption of leasing? Isn't that a decision of the operator?

Answer: Through the Federal Onshore Oil and Gas Leasing Reform Act of 1987, the Forest Service gained authority (formerly held by the BLM) to determine if an area should be leased. Recent court decisions have also required higher levels of NEPA analysis as part of the leasing decision. During the past two years a number of expired and producing leases have not been reissued pending further NEPA analysis to determine if the continued activity is consistent with other resources uses and activities. In cooperation with industry, the Forest Service identified the high priority areas on which leasing decisions will be made following public input.

143. Question: What are the high priority areas? How were these areas decided?

Answer: The high priority areas for FY 1991 include the following National Forests: Custer (National Grassland portion), Helena, Routt, White River, Manti-Lasal, Texas NF, Monongahela, Hoosier, and Finger Lakes. Environmental (NEPA) analyses are scheduled for completion in FY 1991, while analyses on an additional eight national forests are also scheduled to commence.

The areas were selected jointly between industry, BLM and Forest Service based on areas of current mineral extraction and where a high level of interest has been expressed. The schedule may be modified if new information indicates a need to do so.

REAL ESTATE

In FY 1990, the budget estimates that acreage involved in land exchange and adjustment will decrease 25 percent from the FY 1989 level, while funding decreased only 5.7 percent. The cost per acre increased from $50.19 in FY 1989 to $63.21 in FY 1990, an increase of nearly 26 percent.

144. Question: Have costs increased nation-wide, or just in some areas?

Answer: The FY 1989 cost per acre is based on actual accomplishments for the year. The FY 1990 cost per acre is based on estimated accomplishments. We are experiencing increasing costs in the land exchange program nation-wide.

145. Question: What are the components of the increased costs of conducting land exchanges and adjustments?

Answer: Greater program costs are occurring for compliance with the National Environmental Policy Act (NEPA), required public notification, responding to public inquiry, appeals, and litigation.

The explanatory notes (page 5-27) indicate that an estimated 6,000 applications for special use permits are projected FY 1991.

146. Question: How does this compare to prior years--FY 1980, FY 1985, FY 1990?

Answer: FY 1980 - 2,400
FY 1985 - 4,800
FY 1990 - 5,800 (Estimate)

147. Question: What is the average processing time for special use permits, from the receipt of an application to a decision?

Answer: The processing time ranges from one week to four years with an average of six weeks. The amount of time required varies with the number of pending applications and the complexity of the proposal. The amount of ground disturbance involved, with attendant NEPA requirements and the possibility of administrative appeals and litigation, will determine the complexity.

148. Question: How has the processing time changed for the years listed above?

Answer: It has increased due to the increasing quantity and complexity of proposals and new statutory, regulatory, and administrative requirements.

149. Question: What requirements have changed before a special use permit can now be approved?

Answer: Increased public awareness of the NEPA and administrative appeals process requiring more scoping and public notification; heightened public interest in National Forest System management (e.g., protection of cultural resources and sensitive, threatened or endangered animal and plant species); amendments to the Clean Air Act and Clean Water Act; stricter EPA regulations on handling solid and liquid wastes; regulations requiring notice of a NEPA decision be published in local newspaper before permits can be issued.

150. Question: On average, how many special use permits are processed annually?

Answer: Approximately 65,000 existing nonrecreational permits are processed annually in terms of administering the permit and billings and accounting. Approximately 6,000 new applications are received each year, of which about one-half are processed through to issuance of the permit.

For the processing and administering of special use permits, the explanatory notes (page 5-27) indicates that in some cases, cost-collection agreements are used.

151. Question: In what instances would these agreements be used? Are the decision made on a case-by-case bases? What would allow for imposition of such cost-collection measures in some cases but not in others.

Answer: Use of cost collection agreements is determined by: (1) the complexity of the proposal, primarily in terms of the environmental documentation required; and (2) the urgency that the applicant attaches to the processing of the application. Depending on each Region's policy, all applicants may be offered the opportunity to enter into collection agreements or only those where extensive work will be required. In practice, collection agreements are almost totally used with those proposals that require a great deal of analysis, public involvement, and documentation. Taking action on these proposals will usually cause budgeted amounts for processing special use applications at the District level to be exceeded. The applicant is advised that action on the application must wait until funds are available or applicant can bear certain of the processing costs, such as preparation of the environmental documentation and conduct of the public involvement process. The collection agreements specifies these costs, how they will be paid and who will do the work (FS or applicant).

152. Question: How do the cost-collection agreements differ from the special use rental fee?

Answer: The agreements are a one-time only event, used in reaching a decision on the application.

153. Question: Is any portion of either of these fees maintained at the forest where the permit will be issued?

Answer: Funds received from cost collection agreements are held by the forest and expended as costs are incurred. Annual rental fees are returned to the Treasury in their entirety.

154. Question: What are the different fees assessed for different types of special uses?

Answer: Fees for special use authorizations are established on the basis of fair market value (FMV) pursuant to FLPMA. FMV can be established by appraisal or other sound business management practices. Each special use will have a fee established for it. In the extreme, this would mean each permit authorized would have an appraisal made to establish its fee. For efficiency and cost savings, we establish fee schedules for certain types of special uses applicable on a regional (e.g., communication sites) or National (e.g., linear rights-of-way) basis. Fee schedules are developed from surveys of market conditions wherein Forest Service or contract appraisers examine private leases. A fee schedule is usually broken down into specific types of uses. For example, the Regional communication site fee schedules include 12 different types of communication uses, each with its own fee.

The explanatory notes (page 5-28) mention that "minimum fees will be reviewed and adjusted in four regions."

155. Question: Which regions will be involved? How were they selected?

Answer: Regions 1, 2, 4, 6. The Regions selected themselves based on their evaluation of the existing minimum fee compared to the private market.

156. Question: Will the minimum fee be applied regardless of the type of special use? What analysis has been done of how the minimum fee would compare against existing fees in these regions?

Answer: The minimum fee is established for all special uses, unless a higher minimum is established for a specific use. For example, Region 1 has just adopted (after public involvement) a minimum fee of $45.00; however, the minimum fee for amateur radio use (communications site) in this Region is $75.00.

157. Question: What has been the public involvement in this proposal?

Answer: Each Region has or will publish a minimum fee proposal in the Federal Register documenting its findings and requesting public comment.

158. Question: What objective do you seek to accomplish with the imposition of a minimum fee?

Answer: To recover the minimum annual cost of permitting a private use of the National Forest land, including the costs of billing and inspection.

LAND LINE LOCATION

In FY 1990, funding available for land line location is roughly even with the FY 1989 enacted level. Yet, miles of accomplishment are proposed to decrease 9.6 percent, while staffing for this program increases 6.4 percent in the same time period.

159. Question: Why does it take more people to accomplish less work?

Answer: Surveys in the more accessible terrain are being completed, leaving the more difficult areas. Many of our current survey needs involve the urban wildland interface having complex property boundary issues, often requiring extensive title research. Contracting costs are increasing as a result of market conditions.

160. Question: What are the estimated miles of land line location, by region, FY 1989-1990?

Answer:

Region	FY 1989 (Actual)	FY 1990 (Estimate)
1	605	531
2	344	386
3	256	216
4	279	206
5	733	822
6	679	598
8	929	802
9	848	769
10	102	48
Total	4,775	4,378

161. Question: What is the recent legislation that affected contracting procedures and contributed to increased unit costs? Is this affecting all Forest Service programs? What has been the affect on other Department of Agriculture programs?

Answer: Public Law 100-679 amended the Brooks Act (40 U.S.C. 541) to expand the definition of services required to be procured using Part 36 of the Federal Acquisition Regulations. The effect is to require that cadastral survey and mapping contracts which require performance by a State licensed or certified professional must be negotiated as "Architectural and Engineering Services", with a single provider rather than purchased through normal bidding and contracting procedures. The effect, thus far, appears to be limited to cadastral survey (Landline Location) contracts. We anticipate an increase in contract costs of 10 to 15 percent nationwide. Other engineering services contracts were already being negotiated. There is probably little or no effect on other USDA agencies.

FACILITIES MAINTENANCE

The estimated backlog of non-recreation facilities maintenance requirements is $89 million, with nearly 60 percent of the Forest Service's FA&O facilities in need of repair.

162. Question: Is there a priority list for addressing these needs?

Answer: We do not have the detailed information available at the national level to provide a prioritized list for the facility maintenance backlog. The priority for spending facility maintenance dollars is:

(1) The health and safety of employees and using publics, including the treatment of asbestos or radon as needed.
(2) Compliance with laws and regulations that prescribe facility standards, such as handicap access and fire egress.
(3) Work which contributes to increased resource production and decreased costs.
(4) Improve management effectiveness, recruitment, and retention by providing separate bath and toilet facilities for men and women at permanent Forest Service locations.

The following table shows an estimated breakout of maintenance backlog needs by Region:

Region	Number of Facilities Affected	Estimated Costs to Correct
	(dollars in thousands)	
1	1,200	$ 15,700
2	685	10,000
3	875	8,600
4	1,538	14,000
5	1,000	10,000
6	400	6,600
8	346	2,200
9	630	22,400
10	24	200
Total	6,698	$ 89,700

163. Question: At present, how much of this backlog is being addressed annually? Are additional requirements added to the list each year?

Answer: The proposed FY 1991 budget will reduce the backlog by 2 percent ($1.7 million). This backlog has increased annually in the past and will increase in FY 1990 by approximately 2.6 million.

164. Question: At the current rate, when would you project completion of the backlog?

Answer: If we were appropriated Facility Maintenance funds equivalent to the FY 1991 President's Budget request, work equal to the current backlog would be accomplished in 50 years. In the meantime, the new requirements will have totaled $130 million.

COOPERATIVE LAW ENFORCEMENT

Increase funds are requested in FY 1991 for drug control activities.

165. Question: How does the Forest Service's drug control strategy fit in with the comprehensive strategies being devised by the "drug czar" and the National Drug Policy Board?

Answer: The current Forest Service drug control strategy was developed in response to the President's National Drug Control Strategy of September 1989 and January 1990. As one of the designated Federal drug control agencies the Forest Service coordinates all plans and operational strategy in concert with the other Federal drug control agencies and with the Office of National Drug Control Policy.

166. Question: Of the funds requested, what is the split among the functions of task forces, equipment, and a system for collection and analysis of data?

Answer: Approximately $2.15 million will be used to increase the amount reimbursed to State and local agencies for their support to Forest Service drug control operations. These operations are generally task force in nature and each supporting agency may make minor equipment purchases.

Approximately $2.253 million will increase allocations to the nine Forest Service Regions for drug control operations. On-site managers will determine if a small surveillance team is needed, or if a agency task force or multiagency task force is more appropriate.

We estimate that $300,000 will be needed to update our current computer system. This will allow us to compile and analyze intelligence data and to interface with the various existing systems now in use by Federal and State agencies.

Equipment purchases of approximately $110,000 for specialized equipment including electronic intrusion devices, photographic recording systems, night viewing and recording devices. These are the priority purchases for FY 1991 at the national level. Standard and general law enforcement equipment including defensive protective devices, hand held cameras, film processing, court presentation models, etc., will be purchased at the individual unit levels. That cost is unknown at this time.

There will be $400,000 used for research and development on cannabis locating equipment including airborne photography, airborne infra-red photography, and spectographic image technology.

Special accounts of $309,000 will be used to assist other agencies, National Anonymous Witness Reporting Program (WE-TIP), public prevention programs, special training and unforeseen emergency obligations.

167. Question: What equipment is proposed for purchase? What is the equipment status associated with law enforcement? Is there a priority list for new or replacement equipment needs?

Answer: We will be procuring normal law enforcement and investigative equipment e.g.; radios, defensive equipment, and other routine equipment needed to support officers and agents, and for replacement of outdated equipment as needed. Additionally, we will be increasing the amount of specialized equipment such as infrared, seismic, and magnetic sensors, and camera systems, used to locate and monitor drug production sites on National Forest System lands. The overall status of equipment for law enforcement operations in the Forest Service is currently good. The Supervisors of each National Forest are responsible for prioritizing and managing funds allocated to support their law enforcement programs.

168. Question: What equipment purchases will be made from other law enforcement or anti-drug agencies?

Answer: We do not normally purchase equipment from other agencies, however, we frequently request and have transferred to us equipment which is serviceable but surplus to other agencies. These agencies include DEA, Customs Service, ATF, and the Department of Defense. We also take advantage of acquiring seized and forfeited equipment from DEA, the FBI and from the Customs Service when such equipment is needed by us and can be acquired at less cost than from the open market. Trucks, boats, firearms, generators, pumps, and solar power units are among the type of equipment that we acquire when available and serviceable.

169. Question: Why is it necessary for the Forest Service to develop a system for intelligence collection? Aren't systems available that can be catered to the particular requirement of the Forest Service?

Answer: The Forest Service will not be creating a new intelligence system. We are only upgrading our existing data collection system in order to more effectively interface with other Federal data bases.

There are several Federal data bases devoted to drug control purposes. The Forest Service currently utilizes data from most of these data bases, however because our existing law enforcement data management system (LEMARS) is only a statistical program, we are unable to effectively provide investigative information to the Federal data bases, nor are we able to effectively analyze our investigative data. This upgrade will involve acquisition of additional software and enhancement of already existing hardware.

170. Question: What is the total estimated cost of the intelligence system requested in the budget?

Answer: We estimate that the upgrade of our existing system will cost $300,000.

171. Question: What additional law enforcement coverage do you project as a result of the proposed increase for the cooperative program?

Answer: We will be increasing our coverage on National Forest system lands along the Southwest Border, in the Southeastern States, and in the Pacific Coast States. Personnel from our existing level of law enforcement staff will be formed into special task forces for operations in critical target areas in the above locations. These task forces will be augmented by law enforcement personnel from the Department of the Interior and from State and local law enforcement agencies for the period of the special operations.

ROAD MAINTENANCE

172. Question: What is the current estimate of road maintenance needs by region?

Answer: Approximately 52,000 miles of road originally constructed for passenger car use have deteriorated due to a lack of full maintenance to a point where they are now only useable by high clearance vehicles. The cost to restore these roads to full service is estimated at $432,600,000. The increased road maintenance funding in FY 1989 and FY 1990 has gone towards the restoration of these deteriorated roads, for fire damage repairs and engineering support costs. However, the magnitude of the problem continues to grow. We estimate that an additional 48,000 miles of road constructed for passenger car use are deteriorating due to unperformed maintenance. If this is not arrested, these facilities will eventually degrade to the point where they too will be useable only with high clearance vehicles.

Forest Plan implementation funding for road maintenance in FY 1991 is approximately $127,600,000, a $36,370,000 increase over the budget request. This represents the annual road maintenance funding level needed to prevent further deterioration and to accommodate existing traffic demands on the road system. With the Road Maintenance and Road Reconstruction programs defined in Forest Plans, the backlog would be eliminated in 10 years.

Estimated Maintenance needs by Region
(Dollars in Thousands)

Region	Existing Backlog	Annual Need	FY 91 Pres. Budget
1	38,400	11,077	8,310
2	30,900	8,890	6,825
3	42,000	12,098	8,480
4	37,400	10,765	6,647
5	74,900	21,596	17,470
6	109,900	31,656	21,437
8	52,900	15,242	10,372
9	37,800	10,886	7,976
10	8,400	2,430	1,580
WO	-	2,960	2,133
Total	432,600	127,600	91,230

173. Question: How much of these requirements will be addressed in the budget proposed for FY 1991?

Answer: The funding proposed for FY 1991 provides 71 percent of the annual road maintenance funding needed to prevent further deterioration and to accommodate existing traffic demands on the road system. The existing road system will continue to deteriorate and fewer miles will be available for passenger car travel.

APPEALS AND LITIGATION

174. Question: What has been the number of volume of timber sales subject to appeals and litigation: FY 1985, FY 1988, FY 1989, FY 1990 (to date)?

Answer: The following table supplies the information.

NUMBER OF SALES AND VOLUME AFFECTED
BY APPEALS AND LITIGATION
(Million Board Feet)

	--1985--		--1988--		--1989--		--1990--	
	No.	Vol.	No.	Vol.	No.	Vol.	No.	Vol.
APPEALS								
Allowed to Proceed	130	790	411	2,453	218	1,368	193	926
Reworked	30	180	42	270	90	529	37	278
LITIGATION	22	190	32	386	45	249	58	499
GRAND TOTAL	182	1,160	485	3,109	313	2,146	288	1,703

These totals do not include about 260 sales and 1,500 MMBF that are reworked each year because appeals to similar nearby sales have been lodged. These sales are not abandoned; however, they are delayed and incur higher than expected preparation costs.

The average appeal where the sale is affirmed and allowed to proceed takes about 4 months. However, those sales that are reversed or remanded require 1 to 2 years for rework.

175. Question: How do you measure costs associated with appeals and litigation? How are these reflected in TSPIRS?

Answer: Currently, we do not keep a separate account for appeals and litigation. These costs are included as part of the total cost of the timber sale program. However, given the concerns raised in this area, we are going to break out appeals and litigation as an individual reporting item in TSPIRS. This will be done starting with the FY 1991 TSPIRS Report.

176. Question: What is the average time now required for a timber sale--from the initial assessment and evaluation through to sale award? How has this changed in the last five years? What factors have contributed to this change? How do you measure each of those factors?

Answer: Most sales require 3-5 years. It has been hard to evaluate these changes. As sales are litigated and appealed, other timber sales are accelerated through the process to meet the current annual program. Other sales are then moved back in the program and brought forth after the appeal or litigation has been resolved. We don't believe that the time has changed as much as the cost has been increased. We have not measured these changes and can only get a feeling of the trend when we examine the Regional Forester's increases in the cost of doing the timber program. They continually cite the increasing demands to avoid or process appeals and litigation.

A Sales Tracking and Reporting System (STARS) was implemented in FY 1989 to track the sale planning process from inception through post-sale activities.

177. Question: Is STARS a supporting function to TSPIRS? How are the two related?

Answer: Yes, STARS provides part of the data base from which queries are made for the TSPIRS accomplishment records.

178. Question: Is STARS more than a "timber sales status" report?

Answer: STARS is an automated system for tracking and reporting timber sale information from initial sale planning to sale completion. The system is designed to interface with other systems to prevent duplication of work. It is a useful tool for our ranger districts and forests to generate reports, schedule activities, manage information, and effectively administer and control the timber sale program.

179. Question: Does STARS track by volume, by sale, and by cost? If not, why not?

Answer: By administrative unit and timber sale, STARS tracks numerous basic data such as volume, location, and age class; the activity schedule; and, the sale status or change in status. It does not track costs because costs and revenues are tracked by the Central Accounting System.

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

BELOW COST TIMBER SALES

The President's FY91 budget proposes a "test" to evaluate the implications of phasing out certain below-cost commercial timber sales on national forests to determine whether the loss in local economic activity and payments to counties can be offset through expansion of recreation. The "test" will evaluate the effects on 12 national forests under some below-cost guidelines established in the budget.

If I understand the proposal correctly, approximately $5.0 million will be deleted from the timber programs and $10 million will be added to Recreation and Related Trails and Wildlife programs in FY91. The additional $10 million is designed to expand recreation activities for these 9 "test" forests to generate offsetting economic activities to replace the 525 jobs which it is anticipated will be lost as well as the associated income generated, and revenue shared with the counties. The budget also proposes special legislative authority to increase recreation user fees on those test national forests.

It is difficult not to be cynical about this proposal. You are proposing to spend more on recreation than you save on timber, and then you propose a new tax in an effort to provide jobs. This is clearly an "inside the beltway" solution.

180. Question: Did the Forest Service initiate this proposal?

Answer: No. The test was initiated by OMB. Several changes were made in the process of negotiating the final budget.

181. Question: Why would a person who intends to go to a forest for recreational activities choose a forest which he or she will be taxed to use when there is another nearby forest with similar opportunities without a tax?

Answer: We believe the majority of the public expects to pay for service and benefits received. The condition of facilities and visitor service would be improved on the test forests as a result of increased funding. Visitor experiences, for many types of recreation, would, therefore, be enhanced on the test forests.

182. Question: What if the revenues generated from the tax on recreational activities do not cover the costs? Would you eliminate the below cost recreation?

Answer: There are no taxes proposed on recreation activities. There presently are fees for many types of recreation activities on the National Forests and these are proposed for expansion in the below-cost test. In most cases we do not expect income to cover costs and we would not propose to eliminate recreation if income did not meet costs.

183. Question: Of the 525 people whom you expect to lose their jobs as a result of this test, how many will be Forest Service personnel?

Answer: None. Several timber and engineering personnel would be shifted to alternate jobs in recreation and wildlife activities. If the test were to continue longer than one to three years, it is possible there would be a net reduction in jobs on those forests that do not have the ability to offset the loss in timber activities with other activities.

184. Question: Is the test contingent upon enactment of the new fees?

Answer: No, however, the test would be more meaningful with the proposed additional fee authority. Increases in jobs, recreation facilities, and services would be greater, but a significant test could occur without the additional fee authorities.

ECONOMIC DIVERSIFICATION

Two counties near test forests received economic diversification grants from the Forest Service in FY90. Jackson County, Colorado, near the Arapaho National Forest, received $40,000 to study the development of tourism in the area. Beaverhead County, Montana has received $76,000 over two years to study diversifying their economy through additional manufacturing, tourism and recreation.

185. Question: How many of the 525 people that you anticipate will be unemployed will be in those two counties?

Answer: It is extremely difficult to accurately predict where job losses in the timber industry will occur if the Beaverhead and Arapaho are included in the below-cost test proposal. For example, there are six major mills that purchase off the Beaverhead, and only one of those is within Beaverhead County. Each of these mills are extending their working circle beyond what they have had historically. The large mill in Beaverhead County (Stoltze) has the capacity to mill 26 MMBF per year using two shifts. Presently Stoltze has announced a shutdown this spring due to lack of volume. For the past year they have been operating on a one-shift basis due to lack of log supply. Since Stoltze is almost entirely dependent on Beaverhead National Forest timber, they will be the one most affected. With the volumes we predict to be able to sell above cost, Stoltze could not continue to operate even on a one-shift basis. If we made the assumption that Stoltze could successfully compete for all the volume we predict to sell (24 MMBF), then he would probably continue operating at his current level and no additional jobs would be lost. If he were not successful in the bidding process, we could say under a worst case scenario that all the jobs lost would be in Beaverhead County. This would amount to 77 jobs in 1991 and an additional 54 jobs within five years. These include both direct and indirect jobs.

A similar situation also exists in Jackson County, Colorado. If the Louisiana-Pacific mill in Walden were to close, it could cause an estimated loss of 75 to 100 jobs, including both direct and indirect jobs. We do not have firm figures on which mills might survive or where their employees live.

186. Question: Do either of those diversification studies anticipate replacing those jobs lost with new jobs in the new industries at the same pay scale?

Answer: In the way of increasing recreation jobs, we anticipate the following:

	Beaverhead County	Madison County
1991	3 new jobs	2 new jobs
1996	25 new jobs	13 new jobs

These will be created as a result of the information gained from the economic diversification studies. However, we do not expect the new jobs to pay the same wages as the sawmill operators and loggers currently receive. The best possibility that pay scales could remain at or close to current levels would be for the counties to attract new industries such as secondary processing of wood products or some other manufacturing operation.

BELOW-COST TIMBER SALE TEST

The guidelines for this test allow for a variety of exemptions from the test. Most of the guidelines are fairly straightforward. For instance, above cost timber sales will continue. Sales for health and safety reasons will generally continue. Sales of Christmas trees, firewood, posts, and poles will continue. Finally, "sales designed to achieve non-timber resource objectives, if paid for by the benefiting program; e.g., timber sales made for the purpose of improving wildlife habitat will be paid for with wildlife funds."

187. Question: How much volume on the test forests will be considered for non-timber resource objectives?

Answer: In FY 1991, 11 MMBF of sales designed to achieve vegetative management for wildlife will be offered. If the test were to continue for five years, it is estimated that 21 MMBF out of an annual total of 109 MMBF for the nine Forests would be designed with the objective of achieving vegetative management for wildlife.

188. Question: How much on a national level?

Answer: The amount of volume for upcoming years that is for non-timber resource objectives is not known. However, based upon the Timber Sale Information Reporting System (TSPIRS) information for FY 1989, of the total volume harvested, only 2% was specifically identified as being for other resource purposes.

189. Question: Does the TSPIRS system separate sales according to the benefiting program?

Answer: Yes, the TSPIRS system categorizes timber sales into either the "timber purpose", "other purpose", or "personal use" categories. However, all of the costs in TSPIRS (regardless of purpose category) are considered timber costs.

190. Question: If not, how will the Forest Service implement this guideline?

Answer: Not Applicable.

191. Question: Please break down the 123 MMBF of anticipated FY91 timber sales going forward under the test between the 6 guidelines.

Answer: We do not have these figures in the Washington Office. We will ask the Forests to provide them to us and will provide them to your office when they are assembled.

It appears that the guidelines allow "below-cost" sales to proceed in nearly all cases except where communities are dependent on that timber to keep the mills open, the schools open and the roads maintained.

192. Question: What about commercial thinning? Most thinning is below cost but necessary, long-term silvicultural investment and is not included as one of the guidelines.

Answer: Under the test, commercial thinnings must meet the same economic criteria as other sales. It is correct that most, but perhaps not all, commercial thinning sales on the test forests will be below cost. This will diminish the future productive capacity of the forest over the long term, but will not be significant during the time contemplated for the test.

In response to the question, "Why is the Forest Service studying the elimination of so-called below-cost sales?", the Forest Service responded: "Many people in the public, the Forest Service, and Congress believe that timber from the National Forests should not be sold for less than it costs the government to harvest the timber...."

193. Question: Did you discuss this proposal with the people who you anticipate will lose their jobs?

Answer: As is the normal practice in the development of the President's proposed budget, there were no public discussions prior to release of the test proposal. Once the President's budget was released, individual Forests held discussions with public interest groups and individuals about the proposal.

ALL RESOURCE ACCOUNTING SYSTEM

194. Question: When the "all resources accounting system" is complete, is it your intent to eliminate other multiple use activities if they are "below-cost" and if many in the public, the Forest Service and Congress feel that those resources should not be provided if the costs exceed the revenues?

Answer: No, that is not the Forest Services' intent. We believe a range of services facilitating public use of the national forests should be provided without attempting to fully recover the costs.

The All Resources Reporting system is designed to match revenues and costs. When implemented, the system will provide Forest Service managers, the Congress, and the public improved cost and revenue information on all resource programs. This improved cost and revenue information should assist in making policy recommendations and decisions on the wide range of issues in which costs and/or revenues are factors. The system is not being designed to specifically highlight how costs relate to revenues for any program. The system will assist in managing costs.

195. Question: Will the "all resource accounting system" be similar to the TSPIRS system with the three separate reports, one of which would be a statement of receipts and expenditures?

Answer: There are many similarities between TSPIRS and All Resources Reporting System (ARRS). The number of separate reports that will exist in the final of ARRS is being reviewed as the system is being developed and tested. Currently, the All Resources test contains statements of revenues and expenses, statement of cash flow, statement of obligations, reconciliation statements (reconciling accrual, cash and obligation based expenditures), statement of employment and income, and statement of forest management results. The statement of revenues and expenses closely resembles the "statement of receipts and expenditures" in TSPIRS.

TIMBER HARVEST VOLUMES

It is interesting to compare the volume harvested before the plans, the ASQ, the anticipated amount of sales volume on those forests without the test, as well as with the test.

	Current Direction	ASQ	Sustained Yield	Timber Sold	FY91 With Test	FY91 Without Test
Beaverhead	30	17	32	22.4	12	24
Arapaho-Roosevelt	17	26	62	18.9	2	11
Pike-San Isabel	25	26	43	10.9	6	12
White River	16	24	131	26.9	22	19
Chattahoochee	49	51	117	61.1	30	39
Cherokee	48	41	108	32.2	17	36
George Washington	36	49	226	39.0	18	38
Shawnee	12	20	159	11.3	13	15
Wayne-Hoosier	12	8	18	15.5	4	4
Total	245	262	896	238.2	123	198

The long term sustained yield capacity from the Forest Plans of forests included in the below cost test is 896 million board feet. The ASQ is 262 million board feet. The below-cost test essentially reduces this level to 123 million board feet.

196. Question: Would these forests be above cost if the long term sustained yield was being harvested?

Answer: No, they are likely to be even more below cost. The long term sustained yield capacity (LTSYC) is based upon the biological capacity of the land to produce if the forest were in a fully managed condition. Economic feasibility is not a consideration. LTSYC includes some species, sizes and volumes that are currently uneconomic or for which there is no reliable market in the local area. Although some reductions in unit costs for sale preparation and administration would result from economies of scale associated with increased volume, these benefits would be more than offset by reduced receipts from offering low value material.

197. Question: Does the Forest Service anticipate the amount of timber sold for protection from fire, insects and disease to increase or decrease as a result of this test?

Answer: If the test were to continue for a number of years and annual sales were to be reduced from current levels to the amounts projected, it is possible that the amount of timber sold to protect the forest from fire, insects and disease would increase. This might occur over time as timber stands age and are increasingly subject to attack from these natural agents.

FOREST PLAN AGREEMENTS

Correct me if I am wrong, but I believe that there were agreements between the users of three forests included in the test (Cherokee, Chattahoochee and the Shawnee) who spent several months negotiating the plans for those forests with the Forest Service. None of the agreements included a "below-cost" test.

198. Question: Why do you want to tarnish the integrity of the Forest Service personnel who negotiated those agreements with this test?

Answer: The budget proposal does not tarnish anyone's integrity. The negotiated settlement of the appeals did not create a legal requirement to meet quantitative output goals for the timber sales program or for any other activity, nor did the settlements confer special preference on the activities appealed over other objectives in the plans. The planning regulations recognize that the allocation of funding resources is a complex matter involving policy decisions on the part of the President and the Congress which over time may not comport with the plans, including any changes made in settlement of appeals. The regulations provide for amendment or revision of the plans accordingly.

199. Question: Was a below-cost test included in any of the draft or final nine forest plans?

Answer: No.

200. Question: If so, was the test similar to the one proposed in this budget?

Answer: No tests were proposed in the forest plans.

201. Question: Why is the Forest Service proposing to test a system which takes the Forests farther away from the level contemplated in the plans?

Answer: The budget proposed the test to respond to the publics that have been highly critical of the sale program. There are many reasons for sales being below cost, most of which are outside Forest Service control. The total public will and should ultimately decide how and for what purposes national forests will be managed. The test raises the issue for discussion before Congress and the public.

FOREST PLAN CHANGES/MODIFICATIONS

It is my understanding that the Forest Service cannot make any "major" changes to a Forest plan which will substantially alter the original goals without going through the NEPA process again.

202. Question: How would you define a major change?

Answer: A major change is one that:

(1) significantly alters the long-term relationship between levels of multiple use goods and services originally projected.

(2) has an important effect on the entire Forest plan or affect land and resources throughout a large portion of the planning area during the planning period.

These kinds of changes would be contemplated when conditions or demands in the area covered by the plan change significantly. For instance, if a wildlife species were to be listed as threatened or endangered during implementation of a forest plan, then, depending on that species' requirements, it is possible that a major change in the forest plan would be necessary. Another example is Congressional action on wilderness may be significantly different from the recommendation in the forest plan; then, depending on the size, number, location, and other factors associated with the Congressional action, a major change may be called for in the plan.

More specific examples include disasters like hurricane Hugo, or the Yellowstone fires wherein conditions on the ground changed dramatically over night or over a season, and can lead to major changes in the forest plans.

Meeting the requirements of NEPA is a necessity of any amendment to the forest plan. If a change is deemed significant by the Forest Supervisor, then the planning regulations (36 CFR 219) as currently written call for following the same procedures as required for development and approval of a forest plan.

TEST EVALUATION

The Forest Service will evaluate the results of the test at the end of FY91. The Forest Service intends to provide to Congress an evaluation and any recommendations for changes.

203. Question: How will you evaluate this test?

Answer: We will evaluate the results in two areas: (1) monetary impacts to the Federal treasury and (2) socioeconomic impacts to neighboring communities. TSPIRS report number 1 will be used to measure changes in timber expenditures and receipts. Changes in recreation expenditures would also be measured.

Short-term economic impacts to communities and counties will be measured using the IMPLAN model. Rural community-specific impacts will be determined by obtaining data from local businesses, Forest Service recreation service partners and contractors. Success in new job opportunities for displaced workers would be measured.

204. Question: If all sales legitimately fall into the guidelines you have established and no sales reductions occur in FY91, would you consider the test successful?

Answer: A one-year timeframe would give us limited ability to provide sufficient data to evaluate success or failure of the test. The testing of our ability to offset the losses in timber activities through additional investments in recreation, however, is basically independent of the anticipated reductions in timber sales programs. We should be able to gain initial information on this aspect of the test by the end of FY 1991 no matter what the amount of timber sale reductions occur.

205. Question: Would you recommend any changes to the test?

Answer: Not for FY 1991. Changes in sale volume for future years would be evaluated based on the sale criteria developed.

TIMBER SALE CONTRACT SPECIFICATIONS

The below-cost test proposed in the FY91 budget focuses on reducing the number of sales where costs exceed revenues and replacing the lost jobs in the timber industry recreation field.

I have a copy of a timber sale contract from the State of Idaho and a copy of a timber sale contract for the Forest Service. The State of Idaho's contract is less than twenty pages, including the road data. The Forest Service contract is well over 100 pages, plus another half an inch of road specifications.

206. Question: Have you ever analyzed the additional costs or lost revenues as a result of the Forest Service's sale specifications?

Answer: We have had numerous reviews over the year, including several productivity improvement teams, that have focused on reducing sale related costs. Progress has been made on this issue although additional progress is possible. Our engineers have placed particular focus in the past several years on reducing the cost of road construction and on developing road specifications that provide flexibility, where appropriate, while at the same time reducing costs. This effort has been very successful. Since 1983, unit costs per mile for road construction, engineering, and overhead activities have been reduced by more than 30 percent.

207. Question: Does the test include an analysis on how to reduce costs of a timber sale?

Answer: No.

208. Question: If not, why not?

Answer: Direction to reduce costs was not included as part of the below-cost test. However, as part of our own ongoing emphasis, national forests are expected to vigorously and comprehensively examine ways to reduce any inefficiencies in their timber sale programs.

209. Question: Elimination of sales is extremely harsh. Wouldn't it be better to cut costs and increase management efficiency?

Answer: Yes, the most effective way to reduce below-cost timber sales is to improve the efficiency of the timber program itself and/or increase revenue. The Forest Service has been taking steps to do both. We are evaluating additional opportunities to improve the efficiency of timber sale packages. We are also evaluating restructuring national forest timber organizations to reduce administrative costs.

210. Question: What incentives will be initiated for Forest Supervisors to utilize land which is more productive and thereby increase revenues?

Answer: There are not specific incentives. The land base utilized for timber is determined as part of the forest plan. Any departure from the plan in this respect would require either an amendment or revision.

Improving the efficiency of the timber program can be done either by reducing program costs or enhancing revenues, or both. We have taken steps to do both. However, there remain significant opportunities to improve timber program economics, by improving the efficiency of timber sale packages, and by restructuring National Forest timber organizations to reduce administrative costs through organizational changes in timber program staffing and support at the Forest and Regional levels.

We have directed that all National Forests, regardless of their financial situation, should carefully analyze and actively embrace opportunities to reduce or eliminate inefficiencies in the timber sale program through a combination of reducing costs and enhancing revenues.

All costs of the timber sale program have been increasing in recent years. However, the costs of satisfying NEPA and NFMA requirements are increasing at a higher rate than most of the other costs associated with the timber sale program.

TSPIRS

In the FY90 Conference Report, language was included recommending that the Forest Service review three areas in the TSPIRS accounting system. In two of those areas, the Forest Service has agreed with the Committee and plans to go forward. Those areas are:

1. the capitalization of most road construction costs as is done in the private sector; and,

2. the separation of appeals and litigation costs in the TSPIRS.

The third area the Committee requested to have reviewed, was an analysis of the utility of creating an additional TSPIRS report relating costs to actual receipts and displaying costs associated with multiple-use management.

It makes very little sense to me to have timber prepared but never offered included as a cost to the timber program in the TSPIRS system. Nor should a timber sale performed to improve recreation or wildlife habitat be included as a timber cost.

The Forest Service indicates that while a fourth report is not necessary, this type of "cash flow" analysis is available upon request for each National Forest.

CASH FLOW ANALYSIS

211. Question: Is this information compiled nationally?

Answer: No, we did not compile this information nationally for FY 1989. For that year we asked that only the national forests compile and have the information available.

212. Question: Does this cash flow statement eliminate expenses on sales which are offered but not sold with receipts for those sales?

Answer: No. We do not eliminate expenses incurred on sales which are offered but not sold. These costs have been considered part of operating the timber sale program. It is not possible to differentiate these costs based on the accounting records because individual sale data is not maintained.

BUDGETS VS. PLANS

Over the course of the past ten years, the Forest Service has spent millions of dollars and countless man hours assembling a forest plan for every National Forest. Although the plans are not perfect, they do represent a balanced approach to forest management and a blue print for the future.

One of the major areas of criticism facing the Forest Service is in the area of implementing the plans. Data submitted in conjunction with FY91 budget indicates that an additional $639 million is necessary to "fund the plans."

The Forest Service should be given a great deal of credit for the increased funding requested for the plans in the FY91 budget. The 72 percent level requested in FY91 is an increase from the 66 percent requested in the FY90 budget.

I would like to note that the FY90 Interior bill increased the funding of the plans from 66 percent to 77 percent.

Of course within this total there are regional discrepancies and program discrepancies. The FY91 budget proposes to fund 79 percent of the plans in Region 1 and 66 percent of the plans in Region 3. The FY91 budget also proposes to fund 78 percent of the trail maintenance needs identified in the plans, but only 52 percent of Wildlife & Fish Habitat Improvement needs and 78 percent of the timber sale preparation needs.

213. Question: Just looking at how the plans relate to the budget process, would you do anything different in assembling the plans?

Answer: In developing the current plans, we did deal with prospective total budgets differently in the various regions. We are now exploring the feasibility of defining standard funding levels for all plans to minimize misunderstanding of the consequences of inconsistent analyses.

214. Question: What was the cost of assembling the plans?

Answer: In 1985, a GAO study estimated costs of $2.5 million and $2.1 million to assemble the plans of the Boise and Clearwater National Forests, respectively. We believe costs for more recent plans in the Northwest probably have averaged costs of more than $3 million. These costs are, however, no more than two or three percent of total unit budgets.

No matter how hard we work, the funding level identified in the plans seems to increase as fast as budgets and even faster in some programs. For instance, the FY90 budget requested $1.375 billion and funded 66 percent of the plans. The FY90 Interior Appropriations bill provided $1.6 billion and funded 77 percent of the plans. The plan level, however, increased from $2.1 billion in FY90 to $2.3 billion in FY91. It should be noted that the increase in the plan level is in non-commodity programs. The timber program, based on an annual average ASQ, remains stagnant.

Regions have similar problems. For instance, the plan level for the wildlife and fish habitat programs in Region 1 is $8.0 million in FY89. The plan level for the same programs increases to $15.0 million in FY91.

215. Question: Can you elaborate on the funding aspect of the plans?

Answer: We asked our field units to carefully examine their needs when they submitted their data for FY 1991. The real increase in appropriated dollar needs between Fiscal Years 1989 and 1990 was 6 percent. When the increased cost of new field work and environmental analysis necessary to meet legal requirements are accounted for, the real increase in appropriated funds is 3 percent between FY 1990 and 1991. We believe that this relates generally to making up part of the deficit in past accomplishments in the portion of the plan period remaining.

For FY 1991, total appropriated funding within the President's proposed budget would fund approximately 72 percent of the plans. This would compare to the 66 percent funding level in the 1990 President's proposal.

The FY91 budget appears to fund a greater percentage of the noncommodity programs than in previous budgets. For instance, the total amount requested for the Wildlife and Fish Habitat Management program moved from 53 percent in the FY90 budget to 60 percent in the FY91 budget.

It would be unproductive for this Committee to argue with the Forest Service on how the plans were put together. Instead we should seek creative funding opportunities so all regions and all programs are fully funded.

Last year during consideration of the FY90 Interior bill I proposed to fund the plans by providing a 10 percent bonus from timber receipts for a variety of programs only if that forest met their annual average ASQ. Unfortunately, the environmental community and the House of Representatives determined that funding the plans was not a priority and the proposal was ultimately dropped.

216. Question: What is your opinion of this proposal?

Answer: It is our current policy to do everything we can to achieve our budgeted targets. We do not believe the incentive would eliminate the barriers that may prevent meeting targets. The President's FY 1991 budget proposes significant increases in a number of programs within the Forest Service, while supporting efforts to reduce the Federal definit in accordance with Gramm-Rudman-Hollings targets.

217. Question: How many forests are currently meeting their annual average ASQ?

Answer: Based upon the current draft and final forest land management plans, the FY 1990 budget funds 18 forests at full ASQ.

218. Question: If there were adequate pipeline volume, how close would this proposal come to funding the plans?

Answer: This budget proposal will fund forest plans at a 93% level.

219. Question: What funding options is the Forest Service analyzing?

Answer: For FY 1991, total appropriated funding within the President's proposed budget would fund approximately 72 percent of the plans. This would compare to the 66 percent funding level in the 1990 President's proposal.

You have stated we should "seek creative funding opportunities" so all Regions and programs could be fully funded. Since Forest plans form the foundation for NFS program development, it is imperative that we have equity between Forest plans as a first step toward improving our program development processes.

In July 1989, the Forest Service established a committee to conduct an indepth review of program development and budgeting processes used for National Forest System programs. One of the items the Committee was specifically directed to review concerned funding of land and resource management plan with the objective of "leveling" or gaining better equity between Regions. The committee's report will be finalized in July 1990.

The Forest Service will continue to employ the use of the volunteer and challenge cost-share programs. While we enthusiastically support the continued use of the these programs in the future, the potential for their expansion is uncertain.

220. Question: Please provide for the record a detailed analysis of this proposal including, at a minimum, a breakdown of all forests and their annual average ASQs, the volume sold by forest, the amount of additional funds provided to programs in each forest which meet the annual average ASQ and the plan level of those programs for each forest.

Answer: See attached.

REGION	NATIONAL FOREST	TSPQ MMBF	ASQ MMBF	FY 1991 INITIAL MMBF	10% OF RECEIPTS 1/ (Thousand dollars)
1	Beaverhead	17	17	20.1	43
1	Bitterroot	33	33	30.4	
1	Clearwater	173	173	19.4	
1	Custer	4	4	3.1	
1	Deerlodge	23	23	20.6	
1	Flathead	108	100	74.3	
1	Gallatin	21	21	17.9	
1	Helena	15	15	16.9	75
1	Idaho Panhandle	280	280	252.6	
1	Kootenai	227	227	204.3	
1	Lewis and Clark	14	12	15.0	56
1	Lolo	122	107	84.4	
1	Nezperce	111	108	92.8	
	REGION ONE SUMMARY	1148	1120	851.8	174
2	Arapaho-Roosevelt	44	30	1.7	
2	Bighorn	16	15	13.2	
2	Black Hills	152	152	148.3	
2	GM-Umcomp.-Gunn.	36	36	31.5	
2	Medicine Bow	45	28	29.4	
2	Nebraska	1	0	0.2	
2	Pike-San Isabel	26	26	4.0	
2	Rio Grande	36	36	24.2	
2	Routt	54	38	25.9	
2	San Juan	42	42	28.4	
2	Shoshone	12	11	7.8	
2	White River	44	25	19.0	
	REGION TWO SUMMARY	508	439	333.6	
3	Apache-Sitgreaves	137	119	114.4	
3	Carson	42	35	32.2	
3	Cibola	9	8	8.9	
3	Coconino	128	99	78.6	
3	Coronado	4	3	0.0	
3	Gila	36	30	27.6	
3	Kaibab	87	77	73.8	
3	Lincoln	19	16	16.0	
3	Prescott	7	1	1.2	
3	Santa Fe	55	46	41.3	
3	Tonto	17	8	6.0	
	REGION THREE SUMMARY	541	442	400.0	

1/ FY 89 TSPIRS "Total Revenue" inflated to FY 91.

REGION	NATIONAL FOREST	TSPQ MMBF	ASQ MMBF	FY 1991 INITIAL MMBF	10% OF RECEIPTS 1/ (Thousand dollars)
4	Ashley	21	21	17.7	
4	Boise	105	87	91.7	
4	Bridger-Teton	19	12	20.3	51
4	Caribou	26	11	9.8	
4	Challis	5	3	5.2	13
4	Dixie	37	26	27.8	
4	Fishlake	13	3	2.3	
4	Humboldt	0	0	0.0	
4	Manti-Lasal	6	4	4.3	
4	Payette	94	81	81.4	
4	Salmon	24	22	23.9	231
4	Sawtooth	12	10	10.5	
4	Targhee	88	86	61.8	
4	Toiyabe	7	5	4.5	
4	Uinta	8	2	4.3	
4	Wasatch-Cache	37	16	14.5	
	REGION FOUR SUMMARY	502	389	380.0	295
5	Angeles	1	0	0.4	
5	Cleveland	2	0	1.1	
5	Eldorado	146	137	28.9	
5	Inyo	12	7	11.0	
5	Klamath	200	200	139.9	
5	Lake Tahoe Basin	4	0	6.7	7
5	Lassen	199	154	194.2	
5	Los Padres	4	0	1.3	
5	Mendocino	102	93	56.6	
5	Modoc	64	52	79.8	1510
5	Plumas	292	266	265.9	
5	San Bernardino	5	3	5.1	21
5	Sequoia	102	97	114.2	560
5	Shasta-Trinity	248	226	249.2	3626
5	Sierra	136	125	164.0	2251
5	Six Rivers	198	175	161.8	
5	Stanislaus	165	134	65.0	
5	Tahoe	213	179	105.0	
	REGION FIVE SUMMARY	2093	1848	1650.0	7975

1/ FY 89 TSPIRS "Total Revenue" inflated to FY 91.

REGION	NATIONAL FOREST	TSPQ MMBF	ASQ MMBF	FY 1991 INITIAL MMBF	10% OF RECEIPTS1/ (Thousand dollars)
6	Colville	147	123	130.0	
6	Deschutes	225	202	209.0	
6	Fremont	158	140	155.0	
6	Gifford Pinchot	427	388	422.0	
6	Malheur	261	245	212.0	
6	Mt. Baker-Snoqualmie	192	170	124.0	
6	Mt. Hood	347	255	325.0	
6	Ochoco	125	115	124.0	
6	Okanogan	76	63	65.0	
6	Olympic	206	186	162.0	
6	Rogue River	148	137	129.0	
6	Siskiyou	176	160	177.0	6332
6	Siuslaw	348	335	388.0	8966
6	Umatilla	209	154	140.0	
6	Umpqua	402	340	408.0	13975
6	Wallowa-Whitman	215	143	186.0	
6	Wenatchee	146	136	167.0	2407
6	Willamette	710	568	706.0	
6	Winema	211	199	171.0	
	REGION SIX SUMMARY	4729	4059	4400.0	31680
8	NFS in Alabama	78	75	91.0	668
8	Caribbean and Lug.	0	0	0.0	
8	Chattahoochee-Oconee	103	102	59.5	
8	Cherokee	42	41	32.0	
8	Daniel Boone	56	53	41.2	
8	NFS in Florida	102	100	91.6	
8	Francis Marion-Sumter	126	123	95.9	
8	George Washington	49	49	34.8	
8	Jefferson	36	36	27.5	
8	Kisatchie	130	128	128.2	
8	NFS in No. Carolina	82	82	73.3	
8	NFS in Mississippi	254	254	218.2	
8	Ouachita	159	159	169.5	1503
8	Ozark-St. Francis	60	60	64.1	563
8	NFS in Texas	126	126	130.6	798
	REGION EIGHT SUMMARY	1403	1388	1257.4	3532

1/ FY 89 TSPIRS "Total Revenue" inflated to FY 91.

REGION	NATIONAL FOREST	TSPQ MMBF	ASQ MMBF	FY 1991 INITIAL MMBF	10% OF RECEIPTS 1/ (Thousand dollars)
9	Allegheny	100	95	83.8	
9	Chequamegon	71	70	62.8	
9	Chippewa	79	79	84.7	126
9	Green Mountain	16	16	15.9	54
9	Hiawatha	70	70	68.7	
9	Huron Manistee	82	82	68.7	
9	Mark Twain	105	96	84.7	
9	Monongahela	43	43	36.9	
9	Nicolet	97	97	92.7	
9	Ottawa	79	78	72.8	
9	Shawnee	20	20	14.0	
9	Superior	97	97	98.6	138
9	Wayne-Hoosier	19	19	5.0	
9	White Mountain	35	35	31.7	
	REGION NINE SUMMARY	913	897	821.0	318
10	Chugach	17	17	2.0	
10	Tongass	498	450	394.0	
	REGION TEN SUMMARY	515	467	396.0	
	NATIONAL TOTAL	12352	11049	10489.8	43974

1/ FY 89 TSPIRS "Total Revenue" inflated to FY 91.

PIPELINE

To remove uncertainty and guarantee target accomplishment, it has been the goal of the timber program to have 100 percent of field work complete for timber sales as a new fiscal year begins. Nationally, the program entered FY90 with only 30 percent of the field work complete. The Forest Service indicates that one of the reasons you continue to fall behind is that you are moving into more controversial areas. In FY89, the Forest Service had over 250 timber sale appeals tying up over 2.0 billion board feet.

In addition, the Forest Service indicates that NEPA standards have risen due to application of NEPA case law. With over 20,000 timber sales in the pipeline at any one time, a change in the NEPA standards often requires changes in 8,000 to 10,000 sales. While the number of appeals continues to increase, I am becoming more concerned about timber sales which are pulled back because of the threat of appeal.

If the Forest Service continues to drop sales as a result of the threat of appeals, the appeals almost certainly will go away. In addition, Forest Service management of the lands will go away.

221. Question: How extensive is this problem, and how are you addressing it?

> Answer: As the figures you quote indicate, the problem is wide-spread throughout all regions. Although, we are not dropping sales due to the threat of appeals, there are occasions where one sale is successfully appealed and we will pull similar, neighboring sales for reworking. These sales are delayed, not dropped.

During the FY90 hearing, I asked the Forest Service, "How are you ensuring that prospective timber sales are prepared, and not discarded due to the fear of environmental appeal?" The Forest Service responded by stating that higher NEPA standards are a cost of doing business and that the public must have ample opportunity to be part of the decision making process.

That really isn't much of an answer, so let me try the same question a different way. There was a great deal of public involvement when the Forest

Service was putting together the plans for each forest. As difficult as it was, the Forest Service forged compromises which enabled agreements to be made and allowed the majority of the plans to become final.

Many of the complaints, appeals, and threat of appeals, relate to timber sales which are part of those plans. By delaying or dropping planned sales which are part of the plans, the Forest Service is walking away from those agreements as well as the plans. Now that many of the plans are final, the Forest Service seems to only be responding to half the public: those opposed to timber sales included in the plans.

It would seem to me that if a sale included in the plan can be dropped because of the threat of appeal, sales can also be offered which were not contemplated in the plan in order to meet the target directed in the plan.

222. Question: Would you agree?

Answer: We would not agree the Forest Service is avoiding sales for fear of appeal. Therefore, sales are not being dropped. An appeal of a sale tends to delay rather than prevent a timber sale from being offered. As mentioned earlier, we could not enter areas for which the forest plan does not call for timber sales activity without formally amending or revising the plan.

223. Question: What constrains the Forest Service from doing that?

Answer: The forest land management plan, regulation, and law preclude the Forest Service from offering sales not contemplated in the plan.

224. Question: What recourse do those who support the timber sales included in the plans have if the Forest Service does not meet the targets?

Answer: There is no immediate recourse. It is the Forest Service's intent to achieve the targets funded to the maximum extent possible. The objection to timber sales by a portion of the public has made meeting targets increasingly difficult.

PIPELINE FUNDING

In the FY89 Interior Appropriations bill, language was included directing that timber receipts above estimate provided in the President's request be provided to the Forest Service for a variety of programs including wildlife, recreation, trail maintenance, and timber.

The portion provided to the timber program total $29 million which was intended to be used to work on refilling the pipeline.

225. Question: How has the Forest Service used these funds?

Answer: These funds were allocated to the national forests to prepare timber sales for the pipeline. The total targets for FY 1990 were assigned to the national forests based on the amount of Excess Timber Receipts, Appropriated funds, and Salvage Sale funds that were allocated for the pipeline.

At the request of this Subcommittee, the Forest Service provided information in FY90 which indicated that an additional $135 million would be necessary over the next two to three years to refill the pipeline from 60 percent to 110 to 115 percent. At this level, the Forest Service feels there can be adequate amount of timber offered for sale to hit the annual average ASQ. Of that amount, Congress provided $45 million ($30 million in salvage and $15 million appropriated) in FY90. Unfortunately, updated figures from the Forest Service indicate that ground was lost to the pipeline problem and an additional $150 million is necessary over the next two to three years to refill the pipeline.

Using the numbers provided by the Forest Service on the pipeline, we had expected to enter FY91 with 70 percent of the field work complete on 11.5

billion board feet. It appears, however, that we will be lucky to have 50 percent of the field work complete on 10.6 billion board feet.

226. Question: Why do we continue to lose ground?

Answer: Appeals, litigation, and fires. For example, in Region 6 which has been partially protected from appeals by Section 318 of the FY 1990 Appropriations Act, over 500 million board feet of timber have been appealed since October 1, 1989.

VOLUME UNDER CONTRACT

The Forest Service has long believed that keeping prices stable can best be accomplished with a steady supply of timber. On the average, two to three years of volume under contract is adequate to accomplish this goal. In 1985, the uncut timber volume under contract exceeded 38 billion board feet over three years. By the end of fiscal year 1989, this number had dropped below 18 billion board feet in only a year and a half.

At last year's hearing, you indicated that in the States of Oregon and Washington the volume under contract was about 1.8 years. The State of Idaho had about two years.

227. Question: How has the amount of volume under contract changed for those states during the last year?

Answer: Idaho is about the same, 2.2 years, and Washington and Oregon have decreased to 1.4 years (assuming the harvest level in 1989 continues in 1990).

TIMBER SALE BID RATES

In a discussion on timber bid rates at last year's hearing, the Forest Service indicated that the amount of bids on timber sales had been increasing rapidly, particularly in forests affected by the spotted owl situation. During 1988, bid rates increased by 50 to 100 percent and there was one sale on the Mount Hood National Forest where a bid was three and a half times what a similar bid was in 1987.

228. Question: What has happened to bid rates during the last year?

Answer: The Spotted Owl issue has created an uncertainty of timber supply along the west coast in Washington, Oregon, and California. This has created a very high price for timber from the national forests. The value of timber sold has been rapidly increasing. The Mt. Hood National Forest has increased from $444 per MBF to $620 per MBF between the first quarter of 1989 and the first quarter of 1990.

TIMBER BUYOUT LEGISLATION

229. Question: What was the cost to the taxpayer for the timber buyout relief legislation?

Answer: Approximately $2.1 billion.

WESTERN SUPERVISORS

Many Forest Supervisors from the west have expressed concern that the timber program is out of balance with other resource needs. The funding history indicates that the wildlife and fisheries program has increased 157 percent (from $33 million in FY82 to a request of $85 million in FY91), and the timber program has increased 25 percent (198 million in FY82 to a request of $248 million in FY91). I want to continue working to see that the funding for wildlife and fisheries improves but not at the expense of the timber program.

230. Question: Why do more and more of your supervisors seem to want to bring down timber programs in order to fund the noncommodity programs?

Answer: Our Forest Supervisors are committed to the management direction in their Forest Plans and program budget proposals for all resources. Annually they develop program budget proposals that may vary upwards or downwards from the Forest Plan's indicated average annual decadal budget amounts based upon the individual Forest management situation, market conditions, etc. These proposals cover a range of possible funding levels that necessitate trade off considerations. What is often portrayed is not a desire to "... bring down timber programs...", but rather a desire to achieve a balance between budget line items that is more reflective of the distribution in the Forest Plans.

231. Question: What is being done to help them understand the history and the budget process?

Answer: We intend to have each Region provide training to all line officers on the changes with emphasis on just how the forest plan is to be used to formulate program proposals, how these proposals are recommended to the Administration, how the Administration proposes its priorities, how Congress decides the final appropriations subject to the President's signature, and why the budget must be managed to ensure fiscal integrity. As an example, we are utilizing the Woods Institute of Washington, D.C. to provide legislative training at the Region, Forest, and District levels. Approximately one-half of this program is related to congressional and internal budget and appropriation processes.

232. Question: Do you feel the wildlife and fish habitat has improved with these additional funds?

Answer: There have been improvements in habitat for both Wildlife and Fish resources on National Forest System Lands as a result of increased funding. This increased funding has not only allowed for additional habitat work to be completed, but also provided funds to increase the number of biologists at the District as well as the Forest levels.

REGION ONE

The Forest Service contends that a 10 to 15 percent fallout rate for timber sales as a result of higher NEPA standards is all that is necessary to meet the annual average ASQ.

The annual average ASQ for Region 1 is 1.120 billion board feet. A 10 to 15 percent fallout means that somewhere between 1.232 BBF and 1.288 BBF needs to be offered for sale every fiscal year.

In FY88, however, the region offered only 968 million board feet and sold 913 million board feet. In FY89 the region only offered 913 million board feet and sold 922 million board feet. It was the intent of Congress to provide direction and funding for those years so that an adequate amount of timber could be offered and the annual average ASQ met.

If the Congress provides direction and funding to meet a target which is continually not met, there must be a communication breakdown.

233. Question: Do you anticipate the FY90 numbers to be any better in Region One?

Answer: We anticipate that the Region will offer the FY 1990 target of 1.122 BBF as directed in the final allocation. The Region has attempted to increase the total amount of volume to be offered in FY 1990 by concentrating efforts on individual National Forests to complete the necessary environmental analyses. The National Forests in Region 1 continue to receive appeals on all of their sales that are in non-roaded areas. The continued appeal of all sales in these areas will have a major influence on the Region's ability to meet the FY 1990 targets. The Region could have 100-200 MMBF shortfall if sales are not cleared by the environmental analysis process or from appeals. There is not sufficient prepared volume that can be substituted.

234. Question: Would it help to put the target in bill language?

Answer: No. The intent of Congress is clear. Bill language would not help clear timber sales from appeals or litigation.

235. Question: What needs to happen to meet the FY91 target?

Answer: We need a normal fire year that does not draw timber preparation crews and other resources away from field preparation activities. We cannot afford to have significant staff tied up on fires during the prime work season. Also, the appeal and litigation levels need to drop to the level that existed in the early 1980's; the Idaho and Montana wilderness bills need to be passed; and the land allocation in Region 1 needs to be resolved so that the question of what the available land base can be settled (ie, finish the Forest plans and resolve the land base issues).

236. Question: How many additional revenues would have been generated if the targets had been met each fiscal year?

Answer: If the additional unoffered volume could have been released and offered, the additional gross revenue might have reached $27 to 30 million dollars over the next three to four years.

The Region One Forest Supervisors recently wrote Chief Robertson an open letter in which they attempted to explain many of their frustrations. While I found it curious that they would use an open letter for this purpose, I would still like to discuss some of the topics they raised.

One section I found extremely distressing was: "Many people, internally as well as externally, believe the current emphasis of National Forest programs does not reflect the land stewardship values embodied in our forest plans. Congressional emphasis and our traditional methods and practices continue to focus on commodity resources."

I find this statement almost incredible.

The Region sold 82 percent of their annual average ASQ after Congress provided enough funding for the entire ASQ. In addition, Congress provided enough funding in wildlife and fish habitat programs to move from funding 65 percent of the plan as proposed in the President's budget, to 85 percent of the plan as enacted in the appropriation bill.

237. Question: Why is the Region so frustrated when the data indicates Congress is on their side?

Answer: Frustration expressed in the Forest Supervisors' letter to the Chief arises, to a great extent, because of the differences in the way forest level programs are developed versus the National Forest Service program. Forest Supervisors attempt to "balance" their programs in each increment based on the forest plan influenced most heavily by local constituencies. By the time budgets are submitted reflecting national Administration and Congressional priorities, they feel there is little resemblance to the program proposals they submitted, making it difficult to implement the forest plan.

238. Question: Was Region One's request to the Forest Service for wildlife and fish that much better?

Answer: Prior to program budget formulation at the national level, each region submits a range of budget alternatives from 10 percent below the most recent appropriation to full implementation of forest plans. As it turns out, Region One's alternative that was selected for the agency request was, in fact, around $800 thousand less than their share of the final appropriation for wildlife and fish habitat programs.

It is likely that the concern expressed by the Supervisors resulted from the fact that timber sales were selected at a higher alternative than wildlife and fish when the agency request was formulated. This was later increased by the Congress, so that the timber program was financed at 100+ percent of forest plans in Region One while the appropriation for fish and wildlife program was at 82 percent of plans.

The formulation of the agency budget request and subsequent interaction with the Administration and the Congress is not readily visible to the Forest Supervisors and can easily lead to the misconceptions expressed in the letter to the Chief. To overcome this we are sponsoring training sessions by the Woods Institute of Washington, D.C., which examines the budget process in Washington in great detail. We also recently completed a national review of the budget process, the results of which will lead to far greater involvement of Regional Foresters in the national formulation step. This should also lead to greater understanding of the total process by field personnel.

FOREST SERVICE REBUTTAL TO WILDERNESS SOCIETY

I was very pleased to see Associate Chief, George Leonard respond in writing to Mr. George T. Frampton, President of the Wilderness Society, on errors included in a "fact sheet" issued for Earth Day. Mr. Leonard indicated that the "fact sheet" was filled with factual errors, half truths and innuendo.

Speaking of the reforestation efforts of the Forest Service of the past 60 years, the Wilderness Society "fact sheet" states that "the vast majority of such reforestation efforts are far from adequate."

239. Question: Has the Wilderness Society responded to your letter, Mr. Leonard?

Answer: We have had no official response from the Wilderness Society to date.

240. Question: How prevalent is this type of erroneous use of information by environmental organizations?

Answer: Regrettably it is not uncommon for information to be intentionally or unintentionally misused by a variety of interest groups.

I am reluctant to make the analogy between the misuse of information of the Wilderness Society and by the Region One supervisors; however, in this instance, they seem to be in the same boat.

RECREATION

The fiscal year 1990 budget requested $99 million for recreation management. At this funding level, the Forest Service could support approximately 90.4 million people-at-one-time (PAOT), which is 57 percent of the 158 million PAOT capacity.

To address this shortfall, the Committee provided an additional $20 million during the FY90 process, which brought the funding level back to the FY90 base of 104 million PAOT or 66 percent of the capacity. By only restoring the base, the Committee understood that we were not getting ahead and may even slip behind a little since the total recreation use had increased 7 percent since 1984.

Unfortunately, as we move toward the summer season, the Payette National Forest indicates that twelve of their 18 campgrounds will be without water. Newspaper reports indicate that the Boise National Forest has posted signs at some campgrounds seeking public comment on the potential closure of those sites. The Sawtooth National Recreation Area has borrowed personnel from the Challis National Forest and has cancelled a janitorial contract in an effort to save funds and keep campgrounds open.

In total, the recreation management budget for the region increased from $11 million in FY87 to $14 million in FY90. During the same time period, the recreation budget for the Payette National Forest decreased from $278,000 to $251,000. The recreation budget for the Boise National Forest increased from $570,000 in FY87 to $950,000 in FY90.

241. Question: Why do these two forests fare differently in a budget that has done fairly well the past few years?

Answer: The Forest Service budgeting process begins with submissions from each forest as to how much money they need in their various programs, such as recreation, timber, and range. These submissions are made at several different funding levels from minimum funding to full funding for implementation of Forest Plans. Different policy priorities may affect the treatment of the budget requests at the Washington Office, Departmental, OMB, and Congressional levels. After passage of an appropriation bill, dollars are allocated back to Forests (through the Regions) according to their requests at the appropriated funding level.

The operation and maintenance of campgrounds is funded by the budget line item "Recreation Use" within the Forest Service budget. The following information was provided by Region 4 regarding actual allocations of Recreation Use dollars for that Region 4, the Payette and Boise National Forests:

	(Thousand $)			
	FY 1987	FY 1988	FY 1989	FY 1990
REGION 4 TOTAL	12,336	12,486	15,027	15,768
Boise NF	638	784	792	748
Payette NF	384	377	379	360

MINIMUM RATES

The FY90 Conference Report requested that the Forest Service review the role of minimum rates for timber. It is my understanding that the Forest Service is in the process of analyzing a broad range of alternatives. The narrow version would include direct sale expenses minus general administration, and the broad version would include direct sale expenses plus direct program expenses plus indirect expenses (appeals and litigation, road maintenance, land line location).

242. Question: In this process, how will you ensure that Forest Service inefficiencies are not merely transferred to purchasers?

Answer: No recommendation has yet been made to base minimum rates on Forest Service costs. If one is advanced and adopted, the issue must be positively addressed. Consideration would be given to a transition period to allow the Forest Service to incorporate cost-reducing approaches into its timber cost structure. We would do all we can to eliminate any inefficiencies. It may require change in the organizational structure. In addition, measures must be taken to ensure that only legitimate timber costs are included in the costs that form the basis for minimum rates ("charge as worked").

243. Question: When the resource accounting system is complete, will you apply a minimum rate philosophy towards non-commodity resources?

Answer: The All Resources Reporting system is designed to match revenues and costs. When implemented, the system will provide Forest Service managers, the Congress and the public improved cost and revenue information on all resource programs. This improved cost and revenue information should assist in making policy recommendations, and decisions on the wide range of issues in which costs and/or revenues are factors.

The system is not being designed to specifically highlight how costs relate to revenues for any program. The system will assist in determining costs that are too high and areas where revenues may be enhanced.

The are many similarities between TSPIRS and All Resources Reporting system. The number of separate reports that will exist in the final of ARRS is being reviewed as the system is being developed and tested. Currently, the All Resources test contains statements of revenues and expenses, statement of cash flow, statement of obligations, reconciliation statements which reconcile accrual, cash and obligation based expenditures, statement of employment and income, and statement of forest management results. The statement of revenues and expenses closely resembles the statement of receipts and expenditures in TSPIRS.

TREE PLANTING INITIATIVE

Included in the President's FY91 budget is an additional $175,000,000 for a tree planting initiative on private lands. One of the objectives of this program is to offset increases in U.S. carbon dioxide emissions.

244. Question: How do the net federal costs of this program compare to the net cost of below cost sales per unit of carbon fixed?

Answer: America the Beautiful Tree Planting Initiative: Unit costs for carbon are estimated at $3 to $4 per ton. Since trees will continue to capture carbon many years, the Federal cost has been annualized over 40 years using the OMB recommended discount rate of 10 percent. While carbon fixing is certainly a benefit of this Initiative, the program goals are much broader.

Below-Cost Sales: The below-cost timber sale issue is related to the costs and revenues of each National Forest's timber sale program. Though carbon fixing occurs on national forests at different rates, depending on the age and species of trees, it is one of many non-economic values to the sales program, and is not considered in sale design.

These two activities are not comparable and information is not available to provide a comparative analysis as requested.

FIRE RISKS OF OLD GROWTH

The Forest Service recently issued a position paper on old growth values. In the accompanying press release, the Chief stated that "Old-growth forests are important ecosystems that we are just beginning to understand. We've learned enough to know that a significant share of them deserve to be protected and managed for posterity."

245. Question: What is the fire risk of an "old growth" stand compared to a stand which is 40 years old?

Answer: The level of fire hazard and relative risk of a catastrophic wildfire in "old growth" versus a 40-year-old stand varies by forest type. Generally, fire hazard and difficulty of fire suppression is greater in "old growth" stands than in managed 40-year-old stands of similar type.

246. Question: As the Forest Service seeks to protect more "old growth" are you also risking a fire situation similar to Yellowstone which could destroy the same "old growth" you are seeking to protect?

Answer: The large expanse of continuous, decadent lodgepole stands in the Yellowstone area heavily influenced the acreage burned. The acreage and fuel continuity of "old growth" stands on National Forests is generally more diverse, limited in extent, and not as prone to a Yellowstone scenario. Certainly the risk of losing an "old growth" stand is much higher than a managed stand in the absence of an appropriate level of fuel treatment and fire protection.

BUDGET "BALANCE"

Much attention has been focused on the argument that the FS budget is "unbalanced"; that too much of it is spent on timber programs when compared to others.

247. Question: Do you agree with the press and environmental organizations that it really is "out of balance"?

Answer: Forest plans have been developed with extensive public participation and input. We are using the information contained in the forest plans to develop the Forest Service budget. While we would like to fully implement our plans, it is our policy to do everything we can to achieve our targets within the funds appropriated. The Congress represents the public and considers the "balance" each year in the appropriation process. Considerable progress has been made in rounding out our programs in recent years. We would like to see some more progress in this area, but we cannot agree that our program is seriously out of balance.

As budget resources continue to become more limited and land management issues more complex, our efforts have focused on further improving agency productivity and better managing people, dollars, and information. There are ongoing efforts which provide invaluable services to the resource programs of the Forest Service which are not necessarily reflected in Forest Service budgets. These would include Forest Service partnerships, such as the Challenge Cost-Share program; volunteer programs; agreements with State and county agencies, colleges, universities, and Indian tribes; and private and nonprofit organizations, where many individuals perform natural resource related work at little or no direct cost to the Forest Service.

248. Question: What how much and what percentage of your budget is allocated to each of the following categories of activity: (1) Timber/Roads; (2) Wildlife; (3) Fisheries; (4) Recreation?

Answer: The following chart compares these programs to total funds available for the protection and management of the National Forest System.

NATIONAL FOREST SYSTEM FUNDING USED FOR TIMBER AND RELATED ACTIVITIES AS COMPARED TO FUNDING FOR WILDLIFE AND FISHERIES AND RECREATION
(Dollars in thousands)

Activity	APPROPRIATED 1/		OTHER 2/		TOTAL	
	Funds	Percent	Funds	Percent	Funds	Percent
Timber and Related						
Timber Sales	248,836	13.7	113,884	22.5	362,720	15.6
Timber Support	62,016	3.4	---	---	62,016	2.7
Timber Roads	128,681	7.1	22,197	4.4	150,878	6.5
Reforestation	22,941	1.3	168,556	33.3	191,497	8.2
Timber Stand Imp.	19,415	1.1	52,800	10.4	72,215	3.1
Total, Timber and Related Program	481,889	26.5	357,437	70.5	839,326	36.1
Wildlife & Fisheries	72,383	4.0	22,603	4.5	94,986	4.1
Recreation 3/	223,274	12.3	16,617	3.3	239,891	10.3
TOTAL FUNDING	1,821,167	N/A	506,987	N/A	2,328,154	N/A

1/ Includes National Forest System, Construction, Land Acquisition, and Fire Fighting

2/ Includes Permanent Appropriations, Trust Funds, and Other Appropriations.

3/ Includes recreation use, wilderness, cultural resources, trail maintenance, trail construction, recreation construction, and Operation and Maintenance of Recreation Facilities.

249. Question: Approximately how much total revenue does the FS receive annually?

Answer: In 1989, the Forest Service received $1.515 billion and the U.S. Department of Interior received $215 million for a total of $1.730 billion in revenue generated from lands managed by the Forest Service.

250. Question: Using the same categories, approximately how much does each produce?

Answer: Wildlife and Fisheries - None in FY 1989.
Recreation - $38.042 million in FY 1989.
Timber/Roads - $1.373 billion in FY 1989.

251. Question: How much of the total road use on national forest lands is for purposes other than timber?

Answer: Approximately 70 percent of the vehicles using roads on national forest lands are for purposes other than timber.

252. Question: Is that use funded separately? If not, which category covers it?

Answer: Not entirely. For example:

Appropriated road maintenance funds are not designated to support specific resources. They provide for the operation and maintenance of Forest Service roads for all uses including:
(a) recreation activities such as camping, fishing, hunting, hiking, horseback riding, skiing, snowmobiling, sightseeing, and driving for pleasure;
(b) Forest Service management activities such as fish and wildlife habitat improvement, reforestation, timber stand improvement, timber sale planing, cultural resource studies, etc.;
(c) forest fire protection and suppression;
(d) grazing, and many more.

Timber purchasers and other commercial users are required to maintain roads commensurate with their use. Because of the multi-purpose character of the road system, maintenance provided by timber purchasers is a benefit to non-timber users and maintenance provided by appropriated funds is a benefit to timber related use.

Road construction and reconstruction funding supports all road users and is divided into three categories (Timber, Recreation, and General Purpose). Most roads are initially built for timber access and are later used for both timber and non-timber purposes.

253. Question: I would assume much of the 'recreational' use of the roads is by hunters and fishermen. Is that correct?

Answer: Yes. Hunters and and fishermen are one of the larger groups of recreational users of the road system.

254. Question: But in spite of that, you do not budget any funds in either the wildlife, or fisheries portions of your budget for road access, maintenance or repair. Is that correct?

Answer: That is correct. None of the appropriated road construction, road reconstruction, and road maintenance funds are budgeted in any portion of the budget other than the in the Road Construction budget line item and the Road Maintenance budget line item. This is true for timber, recreation, or any program.

255. Question: So, if we cut the funding for forest roads, in the long term, the forest user group that will be affected the most will be the recreation user. Is that correct?

Answer: The long term impacts of reducing the funding for forest roads will affect all road users, most of whom are recreation users. However, the effect on recreation users may only be to redistribute the locations of recreation. The effect on the timber program would be more critical because there is much less opportunity to redistribute the location of timber sales.

256. Question: Are positions such as biologists, hydrologists and soils scientists funded through the timber sale and road construction portions of the budget? If so, what is the total number and percentages of such positions and support staffs as compared to that covered in the wildlife, fisheries and recreational portions of the budget?

Answer: The timber sale and road construction budget line items do not cover salaries for biologists, soil scientists, archeologists, or other specialists who support the timber sale program. In fact, support to the timber sale program comes from such budget line items as Wildlife and Fish, Recreation, Soil and Water, and Forest Fire Protection.

For example, in FY 1990 timber support from Wildlife and Fish is $9.672 million. This is just over 12 percent of the Wildlife and Fish budget. These funds are used for salaries for Wildlife and Fish biologists while they are providing analysis work and other input for the timber sale program. Also in FY 1990, Recreation support to timber is $12.370 million for cultural resources and visual quality management. This is just over 8 percent of the Recreation Use budget. The funds are for salaries and contracts to acccomplish cultural resource surveys and visual management analysis for the timber sale program.

257. Question: Are there any federal agencies other than the FS with responsibility for the sale of timber from national forest lands?

Answer: No.

258. Question: Same question for the other major categories within the budget?

Answer: Both State fish and game agencies and the US Fish and Wildlife Service have responsibilities for managing wildlife, fish, and T&E species on NFS lands.

A few years ago I asked the Congressional Research Service to provide me a rough estimate of how many federal agencies other than the FS had at least some budget responsibility for fisheries on or directly dependent on the management of national forest lands.

The result was surprising. In fact, as I recall, there were about 15 agencies who spend about $2 billion annually to protect and enhance habitat and to enforce laws protecting fisheries that are either on or are dependent on national forests.

I have asked the General Accounting Office to make a more thorough investigation and to report back to me on their findings for both fish and wildlife programs.

In fact, the FS budget is well balanced when all the funding examined and not just that in your budget.

259. Question: In fact, wouldn't you agree that a lot of other agencies -- as well as private foundations -- spend substantial amounts of the taxpayers money on fish, wildlife and recreation programs and projects on or related to national forest lands?

Answer: The Forest Service has developed partnership agreements with 18 national conservation organizations and Memorandums of Understanding (MOU) with 43 State fish and game agencies. These partnerships and MOUs have provided opportunities to expand wildlife and fish habitat enhancement programs on national forest lands. Cooperative programs with these organizations and States have leveraged Federal dollars with private as well as State fish and game agency funds to manage wildlife and fish resources on National Forest System lands.

For increased recreation opportunities and customer service, the Forest Service has many partnerships; however, few of our cooperative efforts involve agencies using taxpayer dollars. Occasionally we have partnership projects with the Bureau of Land Management and the National Park Service, which usually occur where we have common boundaries and/or visitors. Some states have programs whereby user fees for off-highway vehicles and boat registration, for example, are made available to the Forest Service to manage lands and resources for the benefitting publics. Private monies are spent on National Forest system lands by our special use permittees, non-profit organizations and private companies who are working with us to leverage Federal dollars in our recreation partnership efforts.

I would like to see increases in funding for recreation, wildlife, and fisheries programs and will support Administration requests for such increases. However, I will not support increases that are detrimental to a well planned, sustainable timber sale program.

In other words, I will oppose proposed cuts in timber sale and road construction programs where it is obvious that the decision is purely political and aimed at damaging the economy of my own state and others in the west.

BELOW COST SALES

The strategy of making a political issue of of the bogus below-cost timber sale issue has been pretty successful by those opposed to timber harvesting on public lands.

Unfortunately, I don't think the FS has done a very good job of dealing with the issue. In fact, you recently made a decision to halt all sales on ten national forests that did not meet the GAO's definition of being profitable.

260. Question: Do you agree with the GAO's approach to determining what is or is not a "below-cost" sale?

Answer: Although for the purpose of the below-cost timber sale test we have defined it as described in the answer to question 265, we have no official position on how a "below-cost" sale should be defined. However, we have several efforts aimed at evaluating alternative approaches to addressing the below cost sales issue. In addition to the below cost sales test, we have a task group working on developing below-cost sale guidelines, based on TSPIRS, to govern future timber sales. We also have a task group working on minimum bids. These are separate but related efforts. Because these three efforts are closely related, their findings and results will be carefully compared in the development of an overall Forest Service policy on the below-cost timber sale issue.

261. Question: How was the selection of those ten forests made?

Answer: There are twelve (12) proclaimed National Forests administered as nine (9) administrative units proposed within the test.

Criteria cited in the President's Budget Summary include:

- In reasonable proximity to population centers.
- Have experienced rapidly increasing demand for recreation.
- Strong ability to support economic activity other than logging, e.g., the communities in which they are located are not entirely dependent of timber and have the ability to diversify.

262. Question: Please state for the record the names of the ten forests involved and the states in which they are located.

Answer:

Beaverhead	Montana	Arapaho and Roosevelt	Colorado
Pike and San Isabel	Colorado	White River	Colorado
Chattahoochee	Georgia	Cherokee	Tennessee
George Washington	Virginia	Wayne-Hoosier	Indiana/Ohio
Shawnee	Illinois		

Although the Beaverhead National Forest is not in my state, I want to use it as an example because it was one of the ten forests you selected as a part of your grand "experiment".

263. Question: Was the final forest plan for the Beaverhead in place prior to the time of your decision?

Answer: Yes.

264. Question: If so, how is it that you were able to gut the timber sale portion of the plan, effectively putting 300 people out of work, shutting down at least one sawmill and slashing U.S. Treasury receipts by $250 million without complying with the National Environmental Policy Act requirement of full public involvement when making such a major change in a decision originally made in full compliance with NEPA?

Answer: Our projections indicate a net loss of jobs in the Beaverhead National Forest area of 72 and a reduction in Treasury receipts of $243 thousand. The legal aspects would depend upon whether Congress provides explicit statutory direction to implement this test. That statutory direction would override the decisions reached during the planning process.

If there were no statutory direction specific to the conditions on the Beaverhead, there would be a substantial delay before the test would begin. For example, before proceeding we would:

-- allow for public comments; because of the magnitude of the effect on the timber program on this Forest, the "goals and objectives" of the Forest plan would be changed by the test and a significant amendment or plan revision would be required; and,

-- show that timber sale decisions during the test were not arbitrary and capricious, that they were made in a manner consistent with the purposes of the Multiple Use-Sustained Yield Act, and that they were not made solely to produce the greatest dollar values.

I would like you to take a look at the figures on the page I am providing you. All of these figures came from either FS documents or from conversations between my staff and FS staff.

265. Question: In examining this information, it appears to me you have used the GAO-environmental community's definition of below-cost sales to justify shifting funds out of timber programs into recreation programs. Is that assumption correct?

Answer: We defined a below-cost timber sale for purposes of the below-cost timber sale test as follows:

> A sale that is expected to return revenues from that sale (per MBF) that are less than the previous three-year average costs (per MBF) as shown as Total Operating Expenses in the TSPIRS Statement of Revenues and Expenses for that National Forest.

We are not aware of a GAO definition of individual below-cost timber sales, but they do include Payments to States in their calculations of the Net Gain/Loss from timber sales on a forest-wide program. We did not include it in our definition for the test.

The increase in recreation funds was to determine if the loss in local economic activity and payments to counties can be offset through expansion of recreation.

In fact, you actually added an additional $581,000 on top of that if my figures in the right hand column of the Budget table is correct.

Now look at the second table. To come up with the increase in revenues from recreation programs you used in your budget analysis, it appears that legislation will be needed to allow you to charge user fees at campgrounds where they are not currently required.

266. Question: Is that a correct assumption?

Answer: We are proposing new fee authorities. Part of this new authority would permit the Forest Service to implement new fees in campgrounds and for other facilities and services not presently covered under the Land and Water Conservation Fund Act. We expect to be able to increase revenues by about 30% without additional fee authorities but would need additional fee authorities to increase revenues the maximum of 90% predicted at the end of five years.

Let me try to recap the results of your "experiment" with the jobs of 300 people on the Beaverhead National Forest --

267. Question: By the way, how many Forest Service jobs are going to be lost as a result of the "experiment"?

Answer: None. Several timber and engineering personnel would be shifted to alternate jobs in recreation and wildlife activities. If the test were to continue longer than 1 to 3 years, it is possible there would be a net reduction in jobs on those forests that do not have the ability to offset the loss in timber activities with other activities.

After transferring 65% of the funds originally budgeted for timber sale activities -- $753,000 --into recreation programs and adding another $409,000 to the pot, it appears the net result is a loss of 300 jobs, a decrease in in-lieu payments to the counties affected of approximately $70,000 and a loss of $243,000 dollars to the federal treasury, plus the cost to the taxpayer of the additional $409,000 you added to the pot! In fact, without authorizing legislation to increase campground user fees, the treasury will be out an additional $19,000.

268. Question: Would you agree with that assessment?

Answer: Your assessment is essentially correct, however, as indicated in question number 264, the projected loss of jobs on the Beaverhead is 72. Incorporating our numbers, your statement would read:

> "After transferring 65% of the funds originally budgeted for timber sale activities -- $753,000 --into recreation programs and adding another $573,000 to the pot, it appears the net result is a loss of 72 jobs, a decrease in in-lieu payments to the counties affected of approximately $62,000 and a loss of $224,000 dollars to the federal treasury, plus the cost to the taxpayer of the additional $573,000 you added to the pot! In fact, without authorizing legislation to increase campground user fees, the treasury will be out an additional $19,000."

The test is not intended to determine the amount of saving(s) that could be generated, but instead is a test to evaluate the implications of phasing out certain below cost commercial timber sales on national forests and to determine whether the loss in local economic activity and payments to counties can be offset through expansion of recreation. Your analysis projects some implications and we would use similar information in evaluating the success of the test and the worthiness of implementing it Service-wide.

So, in summary, as a result of "saving" money by doing away with so-called below-cost sales you've really just cost the taxpayers of the country some $750,000 plus the loss of income taxes that would have been paid by those well-paid 300 workers who are not going to be in the unemployment line. Add to that figure the loss of corporate and other taxes directly related to the closing of the mill or mills affected and this grand "experiment" is actually going to cost us all a million bucks more or less!

And that's just one national forest out of 155!

If you intend to move forward with this "experiment", I would suggest you will be in violation of the law until you have fully complied with the requirements of NEPA. I also want to see a list of FTE reductions you plan since you will undoubtedly not be needing all of the biologist, engineers, hydrologists, etc. that you now have on the payroll to protect the public from the affects of timber sale and road building activities.

I've also done some further analysis on how some of Idaho's national forests would be affected if the same "experiment" were applied there. In the essence of time, I'll be glad to share that information with you later if you're interested.

Forest Service Response: We would be interested in this information.

QUESTIONS SUBMITTED BY SENATOR WILLIAM L. ARMSTRONG

MAROON BELLS/SNOWMASS WILDERNESS - COLORADO

The FY89 appropriation included $100,000 to appraise the privately held mineral and timber interests of tract of land located in the Maroon Bells/Snowmass Wilderness in Colorado. The results of the appraisal were recently released to the land owner and the Forest Service has offered to buy this property.

269. Question: What caused the delay in completing this appraisal?

Answer: There were two delays. One was was caused by late submission of the mineral report by the Colorado Geological Survey (CGS). The second occurred when the appraiser discovered new market information as the appraisal was being completed and then revised the appraisal to incorporate the new information.

270. Question: When did the federal government acquire the surface rights of the property in the Maroon Bells/Snowmass Wilderness being appraised?

Answer: The Government acquired the surface rights on May 9, 1985.

271. Question: Was the area being proposed for wilderness designation at that time?

Answer: The area had already been designated as a wilderness by the 1980 Colorado Wilderness Act.

272. Question: Exactly what rights were acquired?

Answer: The United States acquired surface rights subject to:

(a) rights of third parties under reservations and exceptions contained in United States patents.

(b) exceptions and reservations pertaining to rights to minerals and timber.

273. Question: Why were the surface and mineral rights left in private ownership?

Answer: The owners of those rights refused to sell them at that time. The Agency decided to acquire what was available and attempted to acquire the mineral and timber rights later.

274. Question: Do Forest Service appraisals of the value of mineral estates usually include core drilling?

Answer: No. Core drilling is highly unusual in Forest Service acquisitions of mineralized properties. Core drilling may have been done on some properties later acquired by the Forest Service, but the purpose of the drilling was unrelated to the purchase.

275. Question: Under what circumstances would core drilling not be used?

Answer: Core drilling would not be used when the cost to the United States or the damage to the resource proposed for acquisition is unacceptable.

276. Question: If core drilling is not used, what specific and additional techniques does the Forest Service require to accurately determine the quantity and quality of the mineral estate in question?

Answer: Absent core drilling, qualified professional geologists would utilize the sampling and analysis techniques standard to the industry to estimate quantity and quality.

277. Question: Why was core drilling not used in the appraisal of the Maroon Bells/Snowmass Wilderness?

Answer: The Agency provided the Congress with three estimates for the cost of appraising the property. Experts consulted at that time indicated that core drilling could have been as disruptive to the landscape as mining. Since we desired to acquire the property in order to protect and enhance the wilderness values of the valley, our preference was to derive a value by means of an appraisal that included mineral data from a report prepared by qualified geologists, without core drilling. The Congress earmarked funds for an appraisal that would only accommodate that option.

278. Question: Since core drilling was not done, could you outline the specific techniques used by the Forest Service to determine the quantity and quality of the mineral estate of the property in the Maroon Bells/Snowmass Wilderness?

Answer: The Forest Service contracted with the Colorado Geological Survey for a detailed mineral evaluation. The evaluation includes:

(a) a summary of the published literature dealing with the geology and economic mineral deposits of the area.
(b) a geologic map of the area.
(c) a detailed study of the marble resources.
(d) a detailed market study of possible marble products.

The Forest Service commissioned a conventional real estate appraisal. However Chief Robertson, in correspondence to members of Congress, stated that this approach was the least accurate.

279. Question: Given the admittance of possible inaccuracy, why was a conventional real estate appraisal done?

Answer: No appraisal, regardless of cost, is 100 percent accurate. The level of appraisal and degree of accuracy is dependent on a number of factors, cost among them. A conventional real estate appraisal was used because this is the normal process for determining the estimated value of land or interests in land.

The Colorado Geological Survey (CGS) conducted an extensive mineral examination and report. Forest Service Director Robertson noted, in correspondence with Member of Congress, this survey was the key input on minerals for the final appraisal. However, the data gathered by the CGS was not used in the conventional real estate appraisal.

280. Question: Why? And what assurances can you give the Committee that the Forest Service determined a valid and technically defensible "fair market value" for this property?

Answer: The Colorado Geological Survey mineral evaluation was utilized by the real estate appraisers. They considered the information included in that evaluation as well as other information available in the private market.

The appraisal report was prepared in compliance with the Uniform Appraisal Standards for Federal Land Acquisitions, by a well qualified independent fee appraiser under contract. The final appraisal report was properly reviewed by a qualified Forest Service review appraiser. Both the appraiser and the review appraiser have several years of valuation experience. The real estate appraisal complies with Federal law and Forest Service policy.

281. Question: The United States Forest Service handbook states the review appraiser may not approve an appraisal with speculative or unreasonable limiting conditions and assumptions. Are the findings of a USFS-sponsored mineral report by a state geological agency more or less speculative than a letter to the appraiser containing preliminary recommendations made without benefit of site-examination?

Answer: To some degree, the information evaluated by the real estate appraiser was speculative. The highest and best use of mineral development for the property is speculative. If the letter to the appraiser referred to is the January 22, 1990, letter from WESTEK, some of the recommendations in that letter were based on information in the CGS report. Consequently, the recommendations are no more or less speculative than the information in the mineral evaluation.

282. Question: You have been contacted by the owner of the property and others concerning the possibility of errors and inaccuracies in the appraisal process. What steps will you take to clarify the concerns raised so the rights of the property owner are respected?

Answer: As we do with all owners of property we are trying to acquire, we will continue to encourage them to provide us with the basis for their views. We will offer to meet with them and attempt to resolve our differences. In this case, the owner has promised, but has not provided any specifics as yet.

QUESTIONS SUBMITTED BY SENATOR CHRISTOPHER S. BOND

CENTRAL HARDWOOD FORESTS

283. Question: How extensive are the central hardwood forests and how important are they in the nation's overall forest resource picture?

Answer: The Central Hardwood's forest, described as the oak-hickory forest types, extends from southern New England in the East, to the Great Plains in the West; and from the southern portion of the Lake States in the North, to the Appalachian Mountains in the South. Central Hardwoods forests accounted for 153.5 million acres of unreserved forest land in 1987--42 percent of the total unreserved forest in the East, and 22 percent of the Nation's total. Most of the 98.4 billion cubic feet of oak growing-stock volume on timberland in the East in 1987 is found in the Central Hardwood forest, as is 16.3 billion cubic feet of hickory, 4.8 billion cubic feet of black cherry, and 1.3 billion cubic feet of black walnut. These and other fine hardwoods found in the forest are in high demand domestically and overseas for lumber and veneer used in furniture, cabinets, paneling, and other high value products.

284. Question: What type of research program does the Forest Service have at Columbia to address central hardwood forest management?

Answer: Our research work unit, NC-4102, conducts research on the silviculture and ecology of oak-hickory forest ecosystems.

RESEARCH FACILITIES - COLUMBIA

285. Question: What facilities do you have at Columbia and are they adequate?

Answer: The Forest Service work unit is located in the basement of the forestry school building. Shared laboratory space is insufficient to operate essential equipment. Some labs lack fume hoods and other safety equipment. There is very limited storage space. A flood from a broken water main last summer caused extensive damage to files, records, photographs, and equipment stored on the floor beneath desks and work tables.

286. Question: Where is the research laboratory on the Forest Service's priority list?

Answer: New space for the Columbia work unit is not included in the President's Budget for FY 1991. It is our number 1 priority for research construction when funds become available.

287. Question: If a combined University and Forest Service structure were built at Columbia, what would be the total cost and how much would come from individual agencies?

Answer: The total cost of a combined University and Forest Service structure would be approximately $14.5 million. The Forest Service share would be $3.5 million. For this contribution, we would receive exclusive use of 16 offices and 2 laboratories, and several other work areas; all free of rent and utilities in perpetuity. In addition, we would share additional laboratory, storage, and conference space with the University.

We understand that both University and State funds already have been pledged and that the University already has received private contributions exceeding $1.5 million.

QUESTIONS SUBMITTED BY SENATOR DALE BUMPERS

FOREST RESEARCH

Arkansas priorities: On March 29, 1989, the Forest Service submitted a report on current and proposed research efforts in Arkansas. Chief Robertson identified 3 top research priorities for Arkansas:

Uneven aged management; wildlife habitat; impacts of timber management on watersheds.

288. Question: Are these still the top research priorities for Arkansas?

Answer: Yes, our highest research priorities in Arkansas continue to be uneven-aged management, wildlife habitat, and impact of timber management on watersheds.

Uneven aged management: Many people would like to see clear cutting and other even aged management harvesting methods abolished on the National Forest sin

Arkansas. The Forest Service has responded that additional research is needed before such a management change can be fully implemented. I believe this work is of the highest priority and will have broad implications for forests in the south and elsewhere.

289. Question: Is research on uneven aged management considered a regional and national priority by the Forest Service?

Answer: Research on all aspects of uneven-aged management is the highest priority for the South. The Directors of the Southern and Southeastern Stations and the Regional Forester for the Southern Region last year agreed on a set of priorities for research to aid the National Forests.

The Experiment Stations in other regions also are working closely with the Regional Foresters on management systems that include alternatives to clearcutting--alternatives such as shelterwood as well as uneven-aged systems.

Unfunded research needs: The March, 1989 report contained a list of high priority unfunded research needs. In response to that report, Congress appropriated additional funds for research at the Monticello/Crossett Research Work Unit (SO-4106) and the Oxford, MS, Research Work Unit (SO-4351).

290. Question: Please describe the activities and accomplishments of the FY 90 research program at Monticello/Crossett. Is all of the work being done in Arkansas?

Answer: In FY 1990, the Monticello/Crossett unit has established new studies of uneven-aged management, natural stand management, and mixed pine-hardwood management. With collaboration from a number of Southern Station and Southeastern Station units and the National Forests, we are attempting to incorporate watershed, wildlife habitat, soils productivity, and biodiversity aspects in these studies. The new studies, located in Arkansas, are complex and will take several years of sustained effort before they begin supplying much information. Long-term continuity will be essential.

The Monticello/Crossett unit, with assistance from the University of Arkansas, this year, as in the past, has done a lot of technology transfer on uneven-aged management. This has included the annual Crossett Field Day, special tours for land managers, and visits by Project Leader Jim Baker and other scientists to advise National Forest staff and other people.

291. Question: What is the FY 91 budget request for Monticello/Crossett? Describe the research program planned for FY 91. Will any new activities be initiated in FY 91? Is all of the work being done in Arkansas?

Answer: The Administration's FY 1991 budget request for Monticello/Crossett is $1,023,000. This includes a $210,000 increase for techniques to enhance wildlife and other forest values and to maintain species diversity.

Multi-resource studies, centering on uneven-aged systems, natural stand management, and mixed pine-hardwood management will be expanded. Most of the 1991 work will be in Arkansas, but some will be done in Mississippi and Texas. The Southeastern Station may establish a companion study in South Carolina.

292. Question: Please answer the previous two questions with respect to the Oxford, MS unit and indicate the funding and program activities allocated to work in Arkansas.

Answer: In FY 1990, the Oxford unit developed an expanded program of watershed and fisheries research in the Coastal Plain and Interior Highlands. In Arkansas, long-term studies continued including (1) impacts of even-aged pine management and uneven-aged pine management on streamflow and water quality in the Ouachitas; (2) impacts of thinning hardwoods, natural hardwood regeneration, and even-aged pine management on streamflow and water quality in the Ozarks; (3) acid deposition impacts on surface water chemistry in the Ozarks and Ouachitas; and (4) subsurface flow processes and nutrient transport through soil horizons in the Ouachitas. New studies were initiated on (1) impacts of road construction, clearcutting, and artificial pine regeneration on streamflow, water quality, and soil nutrients in the Ouachitas; (2) role of geomorphic and riparian processes in regulating channel morphology, hydrologic function, and sediment transport in the Ouachitas; (3) impacts of season, physical habitat structure, and forest management activities on stream fish communities in the Ouachitas; and (4) impacts of forest management activities on leaf litter inputs to streams and litter processing by benthic invertebrates in the Ozarks. The unit works with the Ouachita and Ozark National Forests in the areas of hydrology, water quality monitoring, fish habitat relations, and soil nutrients. Of the total Oxford Research Work Unit (RWU) budget of $1,021,000, approximately $400,000 is committed to work in Arkansas.

The Administration's FY 1991 budget request for Oxford is $964,000 and an additional $107,000 will come through the Southeastern Station for global change research. The research program will emphasize integrated ecosystem approaches. New studies planned for Arkansas include research on (1) transport and dynamics of large woody debris within stream channels in the Ouachitas as impacted by forest management activities; (2) large-scale watershed studies of cumulative impacts of even-aged vs uneven-aged management in the Ouachitas and Ozarks; (3) watershed impacts of acid deposition and climate change; and (4) further expansions of the fisheries studies. Of the anticipated base budget of $964,000 approximately $400-425,000 will be committed to work in Arkansas. At least 50% of the funds to be received for global climate change research through the Southeastern Station will also be used for research in Arkansas.

293. Question: Please provide for the record an updated status report on the unfunded research needs listed in the March 1989 report and indicate whether additional FY 91 funding is required to fund those research needs.

Answer: The Administration's FY 1991 budget request for Monticello/Crossett is $1,023,000 and will cover some of the needs listed in the March 1989 report. However, funding will not cover an ecologist and wildlife biologist, with support positions, as described in the 1989 report.

The Administration's FY 1991 budget request for Oxford, MS, is $964,000. This is an overall decrease of $57,000 from FY 1990 but the fisheries research funding will increase slightly.

Southern Hardwoods: The Stoneville, MS research work unit conducts research on establishing and tending stands of bottomland hardwoods and the linkages between hardwood management and wildlife habitat. Arkansas contains two large mixed pine and hardwood National Forests.

294. Question: What percentage of the research managed at Stoneville is being conducted in Arkansas? What was the total funding allocated for FY 90 and requested for FY 91 for work in Arkansas. Will any of the work be performed under cooperative agreement with the University of ARkansas at Monticello? could this work be more easily managed by the Monticello/Crossett Unit?

Answer: About 20% of the total research program at Stoneville, MS is conducted within the State of Arkansas. This includes research on bottomland hardwood forest management (TMR), wildlife habitat (FER) and insects and diseases (FPR). The research findings apply directly to the St. Francis unit of the Ozark-St. Francis NF but relate only indirectly to the upland hardwood forests in Arkansas.

Total funding at Stoneville for FY 1990 is $1,314,000, made up of $713,000 in TMR, $97,000 in FER, and $504,000 in FPR. The Administration's request for FY 1991 is $1,127,000; an increase of $85,000 in TMR and $11,000 in FER, and a decrease of $283,000 for I&D research. FY 1991 funding in timber and wildlife will allow 20-25% of the research to continue and expand in AR, including a major new study initiated in FY 1990 to examine the influence of size and spatial distribution of forest openings on wildlife use, forest regeneration and bird community composition in an old-growth uneven-aged stand in the Moro River bottoms of Arkansas. The reduction in I&D funds will prevent continuation of work in Arkansas, including a cooperative agreement on oak decline with the University of Arkansas at Monticello.

The bottomland hardwood research program for the entire mid-south is centered at our Stoneville Laboratory. The scientists work closely with the National Forests, universities, other researchers, and research users in Arkansas. It would be highly inefficient to detach the Arkansas bottomland studies from our Stoneville unit's regional program.

- Dogwood anthracnose:

295. Question: What funding is requested in the FY 91 budget for research and state and private forestry for work on dogwood anthracnose?

Answer: The State and Private Forestry budget for FY 1991 includes $60,000 to continue pilot testing of promising control methods and $100,000 to continue surveys to measure the spread of the disease and its impacts in the South. No funding is provided for Forest Research in the President's FY 1991 budget. However, the budget for the Agricultural Research Service includes $35,800 for research on the disease.

296. Question: Could additional funds be spent effectively?

Answer: Funds in the budget for State and Private Forestry are adequate to meet all FY 1991 needs identified by the Forest Service in cooperation with State Foresters and other Federal land management agencies.

Additional funding could be effectively used to support basic biological research on integrated management strategies for disease control, and to fund expansion into a directed breeding program. The breeding program could include studies on genetic mechanisms of resistance, focused on developing flowering dogwoods resistant to the dogwood anthracnose disease.

297. Question: What would be an appropriate increase in funding?

Answer: No increase is needed for State and Private Forestry. A funding level of $500,000 for Research would continue the FY 1990 Dogwood anthracnose program level and allow acceleration of research in the evaluation of control strategies and determination of disease resistance in native trees.

QUESTIONS SUBMITTED BY SENATOR CONRAD BURNS

BELOW COST EXPERIMENT

298. Question: The rationale for the proposal is supposedly to save the federal government some money by discontinuing below-cost timber sales on selected forests. If this is the case, how can the agency justify removing 5.0 million dollars from the timber sale budget and replacing it with 10.0 million dollars for the recreation budget on those targeted forests?

Answer: The goals of the test are to evaluate the implications of phasing out certain below-cost commercial timber sales on twelve national forests and to determine whether the losses in jobs, local economic activity, receipts to the Treasury, and payments to the counties can be offset through expansion of recreational opportunities in the local communities. The additional recreation funds permit us to encourage the economic activities necessary to offset the losses in timber jobs and income.

If the Forest Service truly desires to provide a different economic base to those communities substantially dependent on federal timber and wishes to do so with the least amount of disruption to the local communities, it seems that the proposed experiment should have been along the following lines. Continue the timber sale program as is for the next three to five years with no reduction in funding or harvest levels, however requiring that all sales on these forests be sold at sales prices comparable to comparable private market sales. At the same time, the agency could increase the budget allocation for recreation on the targeted forests. This would allow the forest to begin to build the necessary facilities and promote recreation in these areas. By doing this the possible increase in recreation may possibly offset any job loss that occurs in the industry. Any job loss in the timber industry would then be a result of a lack of ability to compete in the open market, not as a result of a curtailment of timber by the government.

299. Question: Did the Forest Service ever consider such a proposal? If so, why was it not chosen? And if the proposal was not considered, why not?

Answer: The sort of proposal you suggest was not considered. It would have the advantages you note but would delay phasing out below-cost sales.

300. Question: Even if Congress were willing to approve the suggested user fees it will take much more than one year to begin to have any effect on enhancing the recreational opportunities let alone make up for the job loss it will create in the local communities, why then is this put forth as only a one year test? What real information does the agency hope to gain by this one year test?

Answer: The test is part of the FY 1991 budget proposal and is subject to determination as to whether it should be continued in subsequent years. It is reasonable to anticipate that the test would last more than one year. We intend to evaluate the results at the end of the first year and at the end of the test if it continues beyond one year. We hope to gain information on: (1) socioeconomic impacts on neighboring communities, (2) monetary impacts to payments to states, and (3) receipts to Federal Treasury.

301. Question: What rationale was used in determining the forests to be selected for this experiment?

Answer: Criteria cited in the President's Budget Summary:

- In reasonable proximity to population centers.
- Have experienced rapidly increasing demand for recreation.
- Strong ability to support economic activity other than logging (e.g., the communities in which they are located are not entirely dependent of timber and have the ability to diversify).

These forests do vary in their economic opportunities. It is the intent of the Forest Service to consider these variances in efforts to offset impacts and they will be taken into account in any recommendations made for continuing the test beyond one year.

A little more than a year ago the Secretary of Agriculture directed the Regional Forester to redo the Record of Decision (ROD) for the Beaverhead Forest and to look at higher Allowable Sale Quantity (ASQ) levels.

302. Question: Has this new ROD been completed yet? If so, what is the new ASQ?

Answer: No, the new ROD is not yet complete. Completion of the ROD is planned for September 30, 1990. The Regional Forester will be considering a higher ASQ level and the budget proposal in developing the new ROD.

303. Question: If not, how can the Agency propose this new experiment while still rewriting the ROD?

Answer: Since ASQ is an upper limit for the decade, there is no conflict with a sell level below the ASQ. Additionally, since the ASQ is a decadal figure, it is acceptable to deviate from it for one or more years as long as the total sell for the 10 years does not exceed the ASQ.

304. Question: If Congress approves this budget proposal, how does the Agency propose to reconcile the reduction of the so-called below cost timber sales with the ASQ's called for in the respective forest plans?

Answer: Implementation schedules will have to be changed through amendments to the plans, whether or not the test leads to reductions in the commercial timber programs.

Generally, we would expect temporary reductions in the commercial timber programs would not have any substantial effects on achieving the 10-year goals and objectives of the plans. If the test were to continue for only one to three years, no adjustment to ASQ would need to be made since ASQ is a ten-year average. If adequate funding is available in subsequent years, sale levels can be increased in order to achieve the ten-year average ASQ.

TIMBER SALE ACCOMPLISHMENT RECORD

Since completing their forest plans in Region one (particularly Montana) the Forest Service has shown a terrible track record in their ability to meet the ASQ called for in the forest plans.

305. Question: What is the agency doing to try to make up this shortfall?

Answer: The Region has developed a strategy to implement the program and is implementing it within the funding allocated. Numerous fires, appeals, and conflicts over potential wilderness have hampered the Region's ability to complete its work plans. These items are beyond the Region's control.

306. Why should Congress continue to fund the agency at the requested levels when their record of accomplishment is so dismal?

Answer: We would hope that Congress would bear with us given the importance of these programs to the dependent communities of the region. While we are experiencing severe difficulties with conditions beyond our control, it is hoped that over time these situations will be resolved and will permit implementation of the forest plans. In the meantime, we are determined to do everything in our control to meet the targets and to resolve these situations.

QUESTIONS SUBMITTED BY SENATOR DENNIS DeCONCINI

SOUTHWEST FOREST SCIENCE BUILDING

In FY 90, the committee provided $1.5 million for planning, site analysis and architectural design for a Southwest Forest Science complex to be located at Northern Arizona University.

307. Question: What is the current status of the design and engineering for this project?

Answer: The A&E contract is on schedule. Preliminary plans call for a building with two wings--Forest Service Research in one and the NAU in the other--and a shared foyer. Planning and design of a separate headhouse, greenhouse, and nursery complex on nearby Coconino National Forest land is also included.

308. Question: I understand the plan does not now incorporate the Forest Supervisor's office of the Coconino National Forest. How does this affect the total cost of this project?

Answer: The added cost would be $3.7 million; however, we do not support making this part of the project. We initially considered this possibility and determined it not to be in the best interests from both a cost and public service standpoint. The current planned site for the Center is not large enough to accommodate the addition of the Supervisor's Office nor would it adequately service the public. The Architectural Engineering firm that is currently working on the project has progressed to the preliminary design stage. To interrupt the process at this point with a new project scope would general costs in addition to the $3.7 million.

309. Question: What is the current estimated cost of the entire complex?

Answer: Total construction costs for the complete Southwest Forest Science Center are projected to be $20.0 million.

310. Question: How much of this cost is assigned to the Forest Service wing? How much to the university wing? How much of the cost is directly related to combined research space and facilities? How much in reduced cost will result from sharing space, facilities and equipment?

Answer: The Forest Service share of the total cost is $10.0 million which includes the Forest Service wing, Headhouse/Greenhouse complex, half of the site preparation costs (moving utility lines and a new road), and related moving costs. The university wing would cost approximately $10.0 million. While each party will own their own half of the building, they will share approximately 50 percent of the laboratory space and meeting rooms. This will be an ongoing benefit to a shared facility. If the Forest Service had to build its half of the building as a stand alone structure, the total construction cost would be $11.9 million, an increase of $1.9 million.

311. Question: Of the funding necessary for the university wing of the combined building, what percentage is being provided by the state? What is the status of that funding? Is the state's share of the cost of the facility commensurate with similar university facilities?

Answer: Northern Arizona State University has approved bonding authority from the Arizona Legislature for $5 million which would be about 50 percent of the total University cost. NAU proposed to seek a Federal grant for the remaining $5 million. A Federal grant for a State-owned facility or a portion of such a facility is not unprecedented. However, most similar types of facilities are wholly funded by the State.

312. Question: Would you say that the combined research facilities will be more effective in providing research and information beneficial to the public lands? In what ways would you gain efficiencies? Do you anticipate any unique directions or projects in the merged or joint programs? In what ways? Do the national forests directly benefit from state funded university research?

Answer: Yes. The joint concept would embody a partnership in teaching, research, and technology transfer. The Federal government would benefit from the availability of University faculty and graduate students in supporting its research mission and the University would benefit from the Forest Service scientists availability in meeting its graduate teaching mission.

The University and Forest Service are currently developing a partnership in technology transfer for implementing the knowledge and technology developed to support Forest Service and other State and Federal agencies' land management responsibilities. The perception of this at the local and regional level is that this partnership concept will create an excellent opportunity to provide the skills and capabilities to meet the Nation's future needs for sustaining natural resources and quality management of the environment. The national forests benefit from a variety of research efforts. While this includes state-funded research findings, the State also benefits and there are limits to the appropriate degree of Federal involvement if the State is unwilling to commit proportionate resources.

313. Question: Do you believe your research programs in the Southwest will be impacted significantly if permanent facilities are not provided in a timely manner?

Answer: Yes. In January 1987, the USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, was asked by Arizona State University (ASU), Tempe, to vacate its Forestry Science Laboratory (FSL) on the Campus. Language contained in the FY 1989 Forest Service Research appropriations measure (P.L. 100-446, 102 Stat. 1774, dated September 27, 1988) required the Station to terminate its lease on the land at the campus site and to transfer title for the FSL to ASU without compensation. The Station may continue to occupy the facilities until suitable replacement facilities are acquired. Eight alternatives for relocation were analyzed. The selected alternative was to relocate the research programs at Flagstaff in conjunction with Northern Arizona University, School of Forestry. This alternative required construction of new research laboratory facilities because suitable replacement facilities are not available at Flagstaff.

A major concern throughout the more than three years of discussions, analyses, and planning relative to this relocation has been that we minimize disruption to our research programs. Our greenhouse/headhouse facilities have already been removed from the Tempe site and are still not available at the new Flagstaff site for our shared use. This has resulted in additional inconveniences and compressed space problems in the laboratory.

314. Question: Assuming funding for construction could be made available in FY 1991, what would be the construction schedule? Could it accommodate phased funding? If so, how much in federal funds for construction would be necessary in the first year, FY 91? Is it beneficial that all elements of the combined facility be constructed together?

Answer: If funding is made available in FY 1991, the construction would begin about March 15, 1991, and would be completed by September 1, 1992. Phased funding could be accommodated but would be undesireable because of the disruption of people and the Forest Service Research Programs over an extended time frame. Research programs currently at Tempe, which will use the new Flagstaff facilities, would be impacted for a five-year period (1988-1992) because of the required move; the impact the past three years is already evident in their morale and productivity. The only segment of the construction funds that could be reasonably extended until 1992 would be for the Headhouse, Greenhouse, and Nursery Complex. Because the nursery complex at Tempe has already disappeared, delaying construction of the new facilities would further impact scientific productivity. This portion of the construction cost represents 30 percent of the total Forest Service portion. The delay would increase costs substantially by requiring a separate contract for this portion of the construction and would also increase costs as a result of inflation by $230,000 assuming a 5% inflation rate.

315. Question: Is legislation needed to terminate the existing lease on the Arizona State University campus?

Answer: No, the FY 1989 legislation requires the Forest Service to obtain the approval of both the House and Senate Committees on Appropriations to physically relocate from Arizona State University, Tempe, to Northern Arizona State University, Flagstaff. The FY 1989 legislation directed the Forest Service to terminate the lease and allowed the Forest Service to remain at Arizona State University until suitable replacement facilities became available.

316. Question: What are the time requirements in relocating the existing Forest Service lab? Would temporary space be adequate?

Answer: Our existing planning has been geared toward moving out of the "temporary" space in Tempe according to the current construction schedule for new space in Flagstaff. We anticipate that it would take three months to move the employees and equipment from Tempe to Flagstaff when the new building is ready for occupancy.

In 1987, Northern Arizona University identified office space but could not provide the necessary laboratory facilities to conduct our research activities. A move at this time to temporary facilities, even if adequate laboratory space could be found, would be disruptive of the research process. Productivity would fall and a significant loss of employees would occur without sufficient time to plan for replacement. A double move would increase the cost in terms of both dollars and research lost.

TIMBER DEPENDENT COMMUNITIES

In your testimony last year, you reported that meetings were being held in Region 3 with both large and small businesses, and agreement had been reached on several recommendations which were presented to the regional management team and officials of several timber companies. You further testified that when "a timber dependent community reaches a critical situation, the Forest Service and the industry would meet and adjust the sale program, including the bidding method and set aside selection, to provide an opportunity for the mill(s) in those communities to bid on a sale and survive.

317. Question: Has there been a need for this process in the past year?

Answer: Yes. We have adjusted the bidding method on sales several times and adjusted sale selection of set-aside sales to better meet the needs of such mills, both large and small businesses.

318. Question: Will these provisions be included in the final recommendations for the small business timber set aside program?

Answer: Yes. The final SBA regulations will allow the Region to examine the effects of the recalculation of the five-year Small Business set-aside program on the timber supply for dependent community mills and community stability. With industry participation, we can modify the set-aside program to better meet the needs of all businesses.

319. Question: Are there additional steps that can be taken to assist timber dependent communities this year?

Answer: No, none that we are aware of now.

LAND MANAGEMENT SERVICE CONTRACTS

In the FY 89 and FY 90 Report, the committee included recommendations to initiate, on an experimental basis, Land Management Service Contracts which could improve the management of recreation, wildlife habitat, reforestation, and silviculture in areas that have special requirements. The Forest Service was urged to identify areas and enter into Land Management Service Contracts where appropriate.

320. Question: What areas have been identified?

Answer: The Jacob Canyon Project on the Kaibab National Forest.

321. Question: What Land Management contracts have been initiated? What Land Management Contracts are you planning for FY 91?

Answer: No land management contracts have been offered and none are planned for FY 1991. The Jacob Canyon Project, on the North Kaibab Ranger District, was prepared but was not sold due to the Arizona Game and Fish Department concerns which we have not been able to resolve as yet. The Fisher-Campbell area on the Coconino National Forest and the Bray Creek area on the Tonto National Forest are still being evaluated under NEPA.

It is my understanding that there are several areas in Arizona that could lend themselves to Land Management Service Contracts. For example, I am told a number of things need to be completed in the Fisher Campbell area on the Coconino National Forest. These include the closing of approximately 70 miles of road, range and forage rehabilitation, and reforestation.

Also, similar treatments are necessary in the Bray Creek area on the Tonto National Forest. These include, reforestation, wildlife habitat, fire control, water shed improvements and erosion control.

Additionally, I understand there are special needs on the Kaibab National Forest including recreation and environmental protection.

322. Question: Would you consider these areas suitable to the implementation of Land Management Service Contracts?

Answer: We would agree that there are opportunities in recreation and environmental protection for Land Management Service Contracts. However, our Forest program is designed to implement the highest priority projects from our Forest Plan which will yield us the best returns using appropriated dollars. So far, we have found that most areas adapted to Land Management Service Contracts contain lower priority work.

TIMBER SALES PROGRAM

323. Question: At what level do you anticipate the timber sales program to be at in FY 90 for Region 3?

Answer: Our intent is to offer the funded program of 395 MMBF. However, it is possible that there could be up to a 10 to 15 percent shortfall because implementing forest plan standards and guidelines have a more significant effect that anticipated.

324. Question: Will you be able to reach the 400 million board foot offering level for Region 3 identified in the committee bill? If not, why not?

Answer: If we accomplish our planned program for advance sale preparation in FY 1990, in FY 1991 and beyond we should be able to offer or sell 400 MMBF of sawtimer and products. Forest plan standards and guidelines, appeals, and Mexican spotted owl habitat designations have a more significant effect than anticipated and are delaying advance sale preparation work.

325. Question: What portion of your Region 3 timber sale funds did you expend on non-timber related uses such as wildlife and recreation in FY 90?

Answer: We do not use timber sale funds for non-timber activities.

326. Question: Can you continue to meet current Forest Plan ASQ levels for the next three to four years?

Answer: We will not be able to meet our current Forest Plan ASQ level of 443 MMBF in FY 1991-1994. Also, we do not have a consistent market for the small round wood products which is part of the ASQ. We are experiencing some problems with the implementation of the forest plans due to some standards and guidelines not being adequately modeled. There will likely be some reductions in ASQ as Forest Plans are monitored and revised.

327. Question: Emerging challenges and appeals would indicate significant impacts to planned harvest levels early in the forest plan period. What benefit could there be in revising these plans using up-to-date inventory data research and modeling techniques at this time?

Answer: It is true that planned harvest levels are being challenged. The challenges are slowing the rate of accomplishment of the planned timber sale program on some Forests. The Region is currently gathering monitoring data to determine if inventories, planned standards and guidelines, scheduling, or growth predictions are causing the lagging rate of accomplishment. The need to amend or revise plans prior to the end of the 10-year plan period cannot be determined until the monitoring data is compiled and evaluated.

However, the challenges to the timber harvest program are aimed at where, when, and how timber sales will be conducted, if at all. Most of these challenges do not raise a technical issue of inventory, growth, and potential yields. Our past experience with inventories shows that growing stock levels are increasing. The problem is not overcutting. It is one of public acceptance of timber harvest on public lands at all. The problem needs to be settled in public forums to agree upon the desired future condition of public Forests in the short and long run.

MEXICAN SPOTTED OWL

It is my understanding that the Fish and Wildlife Service has a status review pending on the Mexican Spotted Owl.

328. Question: What will be the impact to the users of the National Forests in Arizona resulting from this action?

Answer: The status review itself will have no impact on the users of the National Forests in Arizona. The Fish and Wildlife Service will have until December 21, 1990, to review available information on the Mexican spotted owl and determine whether listing as threatened or endangered is warranted. If the Fish and Wildlife Service determines that listing appears to be warranted, they would prepare a listing proposal and have an additional year before a final listing decision would be made.

329. Question: What is the relationship between the Mexican spotted owl and that we have in the southwest and the northern spotted owl?

Answer: The Mexican spotted owl is one of three subspecies of the spotted owl. It occurs in the coniferous forests of Arizona, New Mexico, and parts of Utah, Colorado, and Mexico. The northern spotted owl lives in the mature and old-growth forests of western Washington, western Oregon, and northern California.

The Mexican spotted owl exhibits several characteristics distinct from the northern spotted owl. Recent studies indicate an ability to fly further for dispersion than northern spotted owls. The Mexican spotted owl also exhibits a wider range of habitats including steep, rock-walled canyons, and its diet is broader than that of the northern spotted owl. Recent research has shown that the Mexican spotted owl is genetically distinct from the other two subspecies of the spotted owl. Although there may be political attempts to tie the Mexican spotted owl to the northern spotted owl issue, such attempts have no credible biological basis.

330. Question: As you prepared your FY 91 budget request, did you include an adequate level of funding to undertake the Forest Service's endangered species activities associated with the Mexican spotted owl? If not, what funding would be required in FY 91 to proceed in as timely a fashion as possible with these activities?

Answer: In FY 1990, Congress appropriated $150,000 to initiate research on the Mexican spotted owl. This funding allowed the scientists at the Forest Service research lab in Tempe, AZ (RM-4251) to initiate research on the demographics of the Mexican spotted owl, investigate the home range size and habitat use patters, and begin some surveys of the major prey species for the owl. In the FY 1991 President's Budget, this research was not funded. To continue the Mexican spotted owl research begun in FY 1990, the scientists at Tempe would need restoration of the $150,000. To proceed in as timely a fashion as possible with research that would provide a scientific basis for spotted owl management in Arizona and New Mexico, an additional $300,000 would be needed, for a total of $450,000.

The FY 1991 President's Budget wildlife and fish budget line item contains $175,000 for Mexican Spotted Owl activities. Accelerated survey efforts could result in the need for an additional $2.1 million.

ARIZONA RECREATION INITIATIVE

A significant amount of work was done in 1990 with funds from the Arizona Recreation Initiative. The Forest Service has shown a positive ability to emphasize strong leadership in new directions and I commend you for this effort.

331. Question: Could you briefly describe what was done and what additional opportunities are there in Arizona if additional resources were made available in FY 91?

Answer: In FY 1990, the quality of customer service to National Forest visitors will be improved. For example, some campgrounds will stay open longer during the year, more frequent garbage collection will be possible, increased maintenance of trails and trailheads will be done, additional law enforcement will be available for public safety, general maintenance and operations will be improved, and more interpretive services will be available to enhance visitors' enjoyment of Arizona's National Forests.

In addition, 22 construction projects, including the design of five new campgrounds and picnics grounds, and two new visitor centers plus the construction or reconstruction of 15 other developed sites, are planned; and nearly 10 miles of trails will be constructed or reconstructed.

Additional funding in FY 1991 could be utilized for needed facility improvements and for management of the growing recreation demand on National Forest System lands in the State of Arizona. It would help protect the Arizona Forests from misuse and resource deterioration. The following is a list of priority construction projects:

	Forest	Project Site or Name	Rec ($000)	Road ($000)
		(Dollars in thousands)		
1	Coronado	Mt. Graham Trailheads Phase 2	60	125
2	Coronado	Twilight Campground	406	362
3	Apache/Sitgreaves	Rim/Lakes Trailheads	0	94
4	Tonto	Palo Verde Picnic Ground	38	32
5	Tonto	Acacia Picnic Ground	38	32
6	Apache/Sitgreaves	Blue Range Trailheads	0	164
7	Tonto	Apache Lake Observation Site	23	34
8	Coconino	Shultz Pass Equestrian Campground	85	55
9	Tonto	Houston Mesa Campground (Surv & Des)	33	33
10	Tonto	Houston Mesa Campground	348	580
11	Apache/Sitgreaves	Forks-Black River Campground Ph. I	229	245
12	Coronado	Snow Flat Campground	51	23
13	Kaibab	White Horse Lake Campground	124	339
14	Prescott	Granite Basin Campground	363	109
15	Apache/Sitgreaves	Fool Hollow Complex Phase 1	1,825	924

332. Question: With the amount requested in the FY 91 budget, will the Forest be able to meet the recreation demand on Arizona's National Forests? If not, what additional amount is needed in FY 91 to meet this demand?

Answer: The funding included in the President's Budget for recreation for the National Forests in Arizona makes a substantial contribution to recreation in Arizona. The Initiative is a compilation of the recreation needs identified in each of the Arizona Forest Plans, but the Initiative's goal is the implementation of the recreation portion of the Plans in a four rather than ten year timeframe. An additional $8.6 million would be needed in FY 1991 if the Initiative were to be carried out as envisioned.

333. Question: What amount of spending for recreation do the Forest Plans for the forests in Arizona prescribe for FY 91? What is the difference between the recreation spending prescribed in the Forest Plans and the amount in the FY 91 budget request?

Answer: Implementation of the Forest Plans for the National Forests in Arizona would require about $23,000,000 in Recreation Use, Trail Maintenance, Trail Construction and Recreation Construction funding in FY 1991. The President's Budget includes approximately $12,500,000 for these recreation related budget line items for the Forests in Arizona, which is about 54 percent of their identified Forest Plan needs and is close to the national average for meeting Forest Plan recreation funding requirements.

The FY 1991 President's Budget allocations as percentages of Forest Plans for each forest are:

Forest	Recreation O&M	Recreation Construction	Trail Construction
	%	%	%
Apache-Sitgreaves	65	97	53
Coconino	63	14	21
Coronado	65	26	20
Kaibob	67	35	184
Prescott	57	12	45
Tonto	65	22	71

Funding for the recreation program for the Arizona National Forests has increased about 70 percent between FY 88 and the FY 91 President's Budget, while the recreation budget for Region 3 (Arizona and New Mexico) increased 62 percent in the same timeframe. During that period, the recreation budget for the entire Forest Service increased 43 percent.

TONTO NATIONAL FOREST SERVICE -- YOUNG ROAD (F.S. HIGHWAY 12)

I am concerned about the condition of Forest Service Highway 12 on the Tonto National Forest. It is my understanding that the deterioration of the surface has made this road nearly impassable and there is an increase in the number of accidents.

The Young area is heavily used for recreation by all age groups and is growing in popularity as a retirement area. The population of Young has doubled within the past three to five years and this growth looks to continue, thereby placing an even greater burden on the existing road system.

334. Question: What are the statistics on the number of vehicles travelling on this road for the last 5 years?

Answer: The traffic on this road has increased steadily since it was reconstructed by the Federal Highway Administration. Traffic counts over the past three years indicate the Average Daily Traffic to be about 100 vehicles per day in the winter months and 500 in the summer. These are spot counts for short periods. Summer weekends are estimated to peak at 1,000 per day. About 5% is commercial traffic and up to 50% is recreation vehicles during the summer months.

335. Question: In view of the number and types of vehicles travelling on this road, is there a need to upgrade it?

Answer: Upgrading this 20-mile road to a paved surface would certainly reduce maintenance cost. However, paving would have a tendency to increase driving speeds. Approximately three miles of the road is less than two lanes wide and several curves would be too sharp to negotiate at increased speeds. This would need to be studied further before paving.

336. Question: Where are the Forest Service road improvement fund commitments in Arizona?

Answer: The FY 1991 fund commitments for Arizona are all related to construction and reconstruction of recreation-related roads. This includes access to and within recreation areas.

337. Question: What funding is requested for road improvements in Arizona in FY 91?

Answer: The FY 1991 funding request for road improvement in Arizona is about $1.6 million.

338. Question: Is there sufficient funding in the FY 91 budget request to pave this road? If not, what is the Forest Service's capability in FY 91 to pave this road?

Answer: The FY 1991 budget request for roads is very tight and is tied to the proposed program. It does not include any funding for improvement on the Young Road. Region 3's total road improvement budget request would not be sufficient to pave the Young Road.

PRESCOTT NATIONAL FOREST -- OFF-ROAD VEHICLE PLAN

On December 29, 1990, the Prescott National Forest announced that there would be a reduction in off-road vehicle use within the forest. Forest officials began looking at trail and road use following a directive from the regional office. The access-travel management policy was the result of a more than two year inventory and analysis. The policy applies to all roads, trails and cross-country travel within the Forest.

The reasons given for this change is an attempt to improve water quality and quantity, soil productivity and to restore the watershed. They are hopeful that by cutting back on cross-country travel it will lead to increased ground cover and a significant reduction in erosion.

There are two specific areas where local homeowners are in strong opposition to the proposed trail sites because of their close proximity to residential areas. They site a number of concerns such as noise and air pollution (dust), the safety of property owners as well as ORV users, disruption of wildlife habitat, increased fire hazard, traffic impacts, private property devaluation, personal injury liability, and the enforcement of Forest Service policies and regulations.

339. Question: What have you done to elicit input on this access-travel management policy plan? How was the Prescott Forest Plan Amendment made available to the public? Did the notification allow adequate time for interested parties to acquire the document?

Answer: The Prescott National Forest held a series of open house meetings: three in the Verde Valley, a combined Prescott-Coconino National Forest meeting, one at the Verde Elementary School, one at Camp Verde City Council Chambers, one at Yavapai College, one at Bradshaw Ranger Station, two at the Prescott National Forest Supervisor's Office, one at the Chino Valley Ranger Station, and a combined meeting for the Prescott Supervisor's Office and Chino Valley Ranger Station. Each meeting was announced by news releases in local newspapers and radio stations. Letters were mailed to people who were on the Prescott National Forest mailing list at that time. A member from each concerned group served on a committee to negotiate their differences and to agree on which trails would be open for what use.

The Prescott Forest Plan Amendment was mailed to each person involved in the public involvement process or who asked to be included on the mailing list. The document was mailed directly to these individuals and was available at the open houses and thus people had access to the material and sufficient time to provide their input.

340. Question: What was the appeal process? Was there ample time to appeal the proposed plan?

Answer: The decision to amend the Prescott Forest Land Management Plan with Amendment 4 was subject to administrative review pursuant to 36 CFR 217 which allowed 45 days to appeal this decision. No appeals were received during that time.

341. Question: Has a NEPA review, and EA or an EIS been done? If so, when was it done and what were the results? If not when will one be done?

Answer: The NEPA review categorically excluded the results from documentation in a Environmental Assessment or Environmental Impact Statement.

342. Question: Through this access-management policy is the Forest Service promoting ORV use?

Answer: The Forest Service is not promoting off-road vehicle use of National Forest System lands. Amendment Four is intended to accommodate a wide variety of uses by residents and visitors, and provides a means of resolving resource degradation and existing user conflicts.

343. Question: Was any notice provided to the Quail Run homeowners in the Verde Valley area explaining what the red flag markers signified?

Answer: The red flag markers were placed in the vicinity of the Quail Run area in the Verde Valley by members of the Northern Arizona Riding and Recreation Club in cooperation with the Prescott National Forest. The Verde District Ranger met and explained the flagging to a group of home owners from the Quail Run area of the Verde Valley immediately after the flagging took place. This meeting was held December 21, 1989, at the Verde Ranger District Office in Camp Verde, Arizona.

344. Question: Does the Forest Service have estimates on the number of off-road vehicles that were used off highway in Arizona in 1989? If so, how many were there? What is the number used on the Prescott National Forest for 1988 and 1989? How many vehicles used the Verde Valley District in 1988 and 1989?

Answer: We have no estimate of off-road vehicle use on the Prescott National Forest for 1988 and 1989 or the number of vehicles that used the Verde Ranger District in 1988 and 1989. Arizona State Parks estimated there were 393,288 off-road vehicles in 1987. Over one-fourth of all Arizona households surveyed for the 1989 Statewide Comprehensive Outdoor Recreation Plan reported that they engaged in some form of off-highway vehicle activity during 1987 resulting in an estimated total of 884,800 participants and 5.1 million user-days.

345. Question: It is my understanding that to resolve the ORV user and property owner disputes over the access-management plan in the Verde Valley, two committees have been formed to develop alternative trail sites. Do those committee members assume any future liability for personal injury resulting from an accident on a trail that may be proposed by these committees?

Answer: The committees are working as volunteer groups to assist the Forest Service in identifying alternatives to resolve concerns that local citizens have concerning a loop road and trail system proposed by an OHV group. Committee members do not assume liability.

346. Question: Does the Forest Service have any liability if someone is injured while riding on a marked Forest Service trail?

Answer: Liability for accidents on trails and roads can occur if the agency is aware of obvious safety hazards or if a hazard has been brought to the Forest Service's attention and no mitigation actions, such as proper signing or removal of the problem, are undertaken.

-CORONADO NATIONAL FOREST / RELOCATION OF THE FOREST SUPERVISORS OFFICE

It is my understanding that the Forest Service is reviewing the possibility of collocating, with a number of other USDA agencies, its Coronado National Forest Supervisor's office on a site owned by the Soil Conservation Service.

347. Question: Please provide the Committee a description of this proposal?

Answer: The Soil Conservation Service (SCS) site at Prince and Romero Roads, adjacent to I-10 in Tucson, totals about 46 acres, with 18+ acres (including all of the buildings) to be acquired by the University of Arizona if the SCS Plant Materials Center leaves the site. SCS has been working to move the Plant Materials Center to the Avra Valley area in response to a property utilization survey by the USDA Office of Operations and GSA. This survey is subject to revision. If the move does take place, the remaining SCS Offices (Area, Field, and Soils) will need new office space in Tucson. Approximately 26.7 acres of the site that are currently under the jurisdiction of the SCS will remain federal land.

The site is considered the ideal location for an interagency visitor information center and for co-location of USDA agency offices. Co-located natural resource agency offices would greatly improve service to the public and would provide one-stop shopping for our customers. We are continuing discussions with SCS on the co-location.

348. Question: What is the status of this proposal? What are its advantages? Why the need to relocate the Forest Supervisor's office from its current location?

Answer: For some time, the concept of a Tucson Basin Visitor Center has been discussed and Tucson, as the hub of the rapidly expanding tourism and convention industry in southeastern Arizona, should be the focal point for information services. The Visitor Center would provide more comprehensive information on many natural resource-related recreational opportunities in the area than currently exists. A cooperative effort of the Forest Service, Park Service, State Parks, Bureau of Land Management, Pima County Parks, and perhaps others is envisioned.

The SCS site is ideally suited for a USDA Office complex to meet the needs of the Forest Service, SCS, and other USDA agencies. Currently, access for visitors to many service-oriented USDA agencies (especially those in the Federal Building) is very difficult due to location and parking problems. Joint use of facilities and shared services could also result in significant cost savings. Some preliminary contacts have been made with other USDA agencies, and it is believed there will be strong support for the USDA Office complex. So far only preliminary discussions of the concept have taken place, including an April 25, 1990, discussion at the USDA State Administration Committee Meeting.

The current Forest Supervisor's Office in the Federal building in Tucson is severely overcrowded and some of the employees have been forced to move to temporary quarters several blocks away. GSA has indicated no additional space is available for the Forest Service in the Federal

Building. Access to the building, especially parking, makes quality service to the public impossible.

349. Question: What would be the disposition of the S.C.S. facilities currently on this site?

Answer: As noted previously, if the Plant Materials Center is moved from the Romero/Prince site, the ownership of all the buildings and approximately the south 18 acres reverts to the University of Arizona. It is critical that the Plant Materials Center have their required facilities in place at a new location prior to any construction of the Visitor Center/USDA Office Building at the Prince Road site.

350. Question: What is the estimated total costs of this proposal? Is there sufficient funding in the FY 91 budget request to proceed with this proposal? If not, how much would be required in FY 91?

Answer: Since the concept is yet in the development stage, cost estimates are far from reliable at this point. However, it is estimated that approximately $30 million would be needed to implement this proposal. The coordination of site plans, final concepts and agreements could be accomplished in FY 1991 for approximately $250,000.

Neither of these amounts are included in the FY 1991 President's Budget and in light of other more pressing priorities, this project is of relatively low priority.

AMERICA THE BEAUTIFUL PROGRAM

The Forest Service is traditionally thought of as managing national forests. However, it has a significant role outside the boundaries of the national forests as the federal leader in forestry, setting standards, transferring technology and helping this country manage its forest resources of all land ownerships.

351. Question: How are the national forest resource (people, expertise, facilities etc) used to help in these areas outside the national forests?

Answer: We provide expertise and assistance beyond the boundaries of the National Forest System, to owners and managers of the non-Federal forest lands, by operating in partnership with State Foresters, universities, and other organizations that serve the forestry community. Through our State and Private Forestry programs, we transfer technology, provide technical information and provide financial assistance.

352. Question: What could be done to strengthen the Forest Service program in providing national leadership to areas outside of the traditional national forest boundaries?

Answer: Many initiatives are already in place to strengthen Forest Service programs outside of national forest boundaries. Included among the initiatives are efforts in America the Beautiful, Rural Revitalization and Economic Development, Urban and Community Forestry, and Forest Land Stewardship to name a few. Each one of these programs is geared primarily to private lands or to urban areas.

353. Question: The America the Beautiful program is within the Forest Service State and Private budget. It's purpose is to cover the entire nation with trees. What thought have you given to including areas thought to be "unconventional" for trees such as the arid southwest?

Answer: The America the Beautiful program is proposed as a separate appropriation outside of the State and Private Forestry budget.

Based on recent experience with the planting under the Conservation Reserve, we expect limited tree planting on rural sites in the Southwest. We do, however, expect a large response to opportunities for tree planting in urban and community areas.

STATE AND PRIVATE FORESTRY

354. Question: An accepted landscape design philosophy termed the "Xeriscape Concept" is being developed in the southwest. This approach recognizes the need to plant in concert with the prevailing environment. Could an enhanced forestry program on state and private lands in Arizona be used to help further these concepts? Would these concepts have application in other parts of the U.S.?

Answer: Historically, forestry programs on State and private lands in Arizona have used some of the "Xeriscape" concepts. Further work is needed to identify new exotic and native trees that will be hardier, provide more shade, and use less water. Arizona State Forestry personnel have made progress on this. They have developed a list of trees that are suited for planting in the lower elevation communities. The knowledge gained in these communities in Arizona could be applicable to other parts of the country that experience similar low water and temperature extremes.

It appears that with the increased interest in the environment, global warming, and concern over deforestation, the Forest Service should have a greater presence in things like environmental education, technical assistance to landowners and state forestry organizations, technology transfer and general leadership of the nation's forestry community.

355. Question: What can be done to advance the Forest Service's Programs in these areas? Can we make use of the tremendous resources in the Forest Service (people, expertise and facilities) to help our communities, cities, states, industry and private landowners to become more environmentally aware?

Answer: Yes, we are up to the challenge of enhancing our performance and using our resources in the areas you suggest. There are current programs and activities that can be further enhanced to meet today's needs and interests in land ethics, and general environmental land and resource forestry. Accelerating environmental education with our many partners and cooperators is one means. Integrating our expertise, technical knowledge and assistance with other land management agencies across the country is another.

Through the "Cooperative Forestry Assistance Act of 1978", we provide general leadership and encouragement of environmentally sensitive management of forest, range, and urban lands beyond the boundaries of the National Forests.

We work with many private and public entities to provide up-to-date information and technology; technical assistance; financial assistance; and wildfire, insect, and disease protection to landowners and State forestry organizations. Forestry technology and information can be effectively delivered around the globe.

Through the America The Beautiful program, proposed in the 1991 President's budget at $175 million, we can help offset increases in atmospheric carbon dioxide, improve forest management, and provide multiple environmental and economic benefits.

ALTERNATIVE CONFLICT RESOLUTION

Conflict resolution alternatives include a number of proven approaches that do not require formal litigation, for example, facilitation of meetings by trained third parties, mediation and arbitration.

356. Question: To what extent is the Forest Service using alternative dispute resolution techniques to resolve conflicts between the Service and outside public and private organizations?

Answer: We are committed to fostering a public participation climate that allows for the open expression of ideas and that encourages the public to join with the agency in identifying and analyzing natural resource management alternatives that balance present and future resource needs and objectives. This effort increasingly incorporates alternative dispute resolution techniques in our decisionmaking process. In addition, most Regions use conflict resolution techniques to negotiate settlements in both litigation and the administrative appeal process.

357. Question: What is the current backlog (number and age) of situations where such techniques might be used?

Answer: We make approximately 10,000 decisions a year which are based on environmental analysis as specified in the National Environmental Policy Act (NEPA). Public input and resolution of conflicts is a key component of the decisionmaking process. While each decisionmaking unit knows which proposed actions are awaiting decisions, we do not have such Service-wide data readily available.

358. Question: Why is the Service not making greater use of these techniques?

Answer: We believe the public interest is far better served by mutual effort to resolve differences during the decisionmaking process rather than by trying to resolve these differences after a decision is made. Conflict resolution is emphasized formally only in our administrative appeal regulations. Even though we are actively pursuing negotiated settlements to administrative appeals, the overall success rate is not as high as we would like.

The Forest Service is lacking in both experienced staff and training in conflict resolution. Further, conflict resolution/negotiations take an extended period of time. Nevertheless, use of conflict resolution techniques continues to grow, especially in the pre-decisional phase.

NATIONAL TIMBER BRIDGE INITIATIVE

359. Question: Can the species of trees that are prevalent on Arizona's National Forests be utilized for use in the construction of timber bridges under the Timber Bridge Initiative?

Answer: Yes. Three timber bridges funded in 1990 will use Ponderosa Pine, a species found throughout the State of Arizona. Two completed bridges, funded in 1989, located in Pueblo County, Colorado, and Mora County, New Mexico, were constructed from Ponderosa Pine.

360. Question: Does the Forest Service have an estimate on how many bridges in Arizona need to be repaired or replaced which may be suitable for the utilization of timber for construction? What have been the average costs for timber bridges under this Initiative?

Answer: The National Bridge Inventory, conducted by the United States Department of Transportation in 1988, indicates about 375 bridges in Arizona are "structurally deficient or functionally obsolete." We estimate about 325 of these bridges would be suitable for wood construction. So far, the average cost of the Demonstration Timber Bridges has been about $70,000.

361. Question: How do local officials learn about the availability of federal cooperative dollars under this Initiative?

Answer: Currently there are three primary sources of information. These are the Timber Bridge Information Resource Center in Morgantown, West Virginia; seven Timber Bridge Coordinators located in various Forest Service field offices across the country; and the 50 State Foresters. This network provides information about the initiative, how to develop a proposal for a Demonstration Timber Bridge, and the names and locations of businesses and industries involved with modern timber bridge technology.

362. Question: Have any Arizona counties received funding under the Initiative? What were the nature of those contracts?

Answer: No.

363. Question: What can the Forest Service do to make local officials in Arizona better aware of the timber bridge program? Is there sufficient funding in the FY 91 budget to do this?

Answer: We can improve and emphasize our outreach efforts. This can be done through a combination of better networking, more information packages, conferences and workshops, and working directly with local transportation officials. The proposed budget for FY 1991 provides $500,000 of wood utilization funds to continue some of the current work of the Timber Bridge Information Resource Center in Morgantown, West Virginia. Through a very focused effort, the Center can maintain a base level of technical assistance, networking, and information distribution.

COCONINO NATIONAL FOREST LAND ACQUISITION

I have received a great deal of mail concerning the proposed acquisition of Cathedral Rock near Sedona, Arizona.

364. Question: What is the status of this acquisition? Is there sufficient funding in the FY 91 budget request to acquire Cathedral Rock?

Answer: There is no funding in the FY 1991 President's Budget to acquire this tract. There are currently no plans for its acquisition.

365. Question: What is the priority of this acquisition relative to other proposed Forest Service acquisitions in Arizona?

Answer: This is a low priority compared to other proposed Forest Service acquisitions in Arizona.

366. Question: How would the Service gauge the local support for this acquisition? Is there any opposition?

Answer: There is support from the Verde Valley School and from the Sedona community area. Two of the owners are unwilling to sell for the appraised value. Otherwise, local opposition to the purchase is not likely.

367. Question: Who currently owns Cathedral Rock?

Answer: The Cathedral Rock formation and its main outslopes are owned by the Federal Government and are part of the Coconino National Forest. The two tracts referred to are located at the southwest toe of the formation and do not contain any significant part of the Cathedral Rock formation or its main outslope.

FOREST SERVICE LANDFILL POLICY

I understand that the Forest Service is in the process of formulating a national policy concerning landfills. This proposed policy is expected to recognize the issues concerning landfills on National Forests. Also, the policy will address situations where other viable landfill alternatives do not exist on private lands and recognizes that land exchanges and land sales may be possible solutions to the sighting of landfills on the National Forests.

368. Question: When do you anticipate finalizing the new Forest Service landfill policy? Will there be an opportunity for public comment?

Answer: The policy is now in the Interdepartmental review process. It is in the form of proposed policy and will be published in the **Federal Register** with a 60-day public comment period.

369. Question: What is the actual date the Forest Service will require the closure of landfills on the National Forests?

Answer: The date in the proposed policy is December 31, 1999.

370. Question: Is the Forest Service willing to sell or exchange current landfill sites on National Forests? Would this include enough land to allow for possible expansion? What is the Forest Service policy on the expansion of landfills?

Answer: The proposed policy would not allow for sale or exchange of National Forest System land that is, or has been, permitted for sanitary landfill purposes. Current policy varies by Region and most allow for expansion of permitted landfills but not new landfills. The proposed policy would not.

371. Question: What is the Forest Service's liability for landfills on National Forests? Does the Forest Service retain any liability in the event these lands are sold or exchanged out of federal ownership?

Answer: The United States is liable for releases of hazardous substances and/or environmental damage occurring as a result of the permitted use of federal land for sanitary landfill purposes. Provisions of the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601, and the Resource Conservation and Recovery Act, 42 U.S.C. 6903, apply. The liability remains when the lands are sold or exchanged.

372. Question: What will be the process for appraising these landfill sites? Will these sites be appraised as landfill sites or will fair market values be used?

Answer: Since the proposed policy would not allow sales or exchanges, no appraisals would be made.

There appears to be confusion about the monitoring policy of landfills on National Forests after they are closed. There are indications that EPA regulations call for site monitoring for 30 years if the landfill is closed after July 1, 1991. However, if the landfill is closed prior to this date, the monitoring may be less stringent.

373. Question: What are the monitoring standards for closed landfills on National Forests? Who is responsible for the monitoring of these sites? Who is responsible for the enforcement of the standards for closed landfills?

Answer: There are no current Federal regulations requiring landfill monitoring. EPA is currently promulgating regulations on monitoring of landfills--40 CFR, Part 258, Criteria for Municipal Solid Waste Landfills--and expect to finalize and publish in the **Federal Register** early in 1992. When these regulations are in effect, ground-water and gas monitoring will be required for 30 years after the landfill site is closed. National Forest System land will come under these regulations.

The operator of the landfill, which in this case is the permittee, will be responsible for monitoring closed landfills after the implementation of the EPA regulations. The operator of the landfill is required to comply with Federal, State, and local regulations pertaining to landfills. Under the EPA regulations, it is expected that the States will be responsible for enforcing the regulations on monitoring.

QUESTIONS SUBMITTED BY SENATOR PETE V. DOMENICI

BUDGET IMPACT OF BELOW COST TIMBER SALES

The President proposes a test proposal to phase out below cost timber sales in the following 9 forests:

National Forest	State
Beaverhead	Montana
Arapaho and Roosevelt	Colorado
Pike and San Isabel	Colorado
White River	Colorado
Chattahoochee	Georgia
Cherokee	Tennessee
George Washington	Virginia
Wayne and Hoosier	Indiana/Ohio
Shawnee	Illinois

The budget includes an additional $10 million in FY 1991 for recreational activities for these national forests to offset the adverse economic impact associated with phasing out these below cost timber sales.

Currently, a portion of timber receipts are paid back to local communities for schools and roads. Since this proposal would lead to a loss of timber receipts and a corresponding cut in payments to states, the Administration proposes new recreation user fees to generate revenues for partial distribution to local counties. Congress has been reluctant to increase recreation fees in the past.

374. Question: What will be the spending and receipt impact of your below cost timber sale proposals over the next five years?

Answer: The expenditures in timber and related support activities, such as road construction, would drop by nearly $5 million in FY 1991 from the projected expenditures for that year without the test. By the 5th year, if the test were to continue, the annual reduction would be somewhat over $6.2 million. The recreation program expenditures would go up in order to encourage additional revenue and local economic activities in that area. In FY 1991, $10 million would be transferred to the recreation account. By the 5th year, recreation expenditures could increase by about $13.4 million if no additional fee authority is legislated.

The net impact on receipts varies by whether or not new legislation is passed to authorize an expansion of our recreation fee opportunities. If legislation was passed, the net change in receipts would be a gain of over $1.4 million in FY 1991 and an annual gain of nearly $3.2 million by the 5th year. Without legislation to increase recreation fees there would be net losses of over $600 thousand in FY 1991 and losses of nearly $1.1 million annually after the test is fully operational.

375. Question: What do you estimate will be the direct and indirect economic impacts of phasing out these timber sales?

Answer: The net economic impacts vary by whether or not new legislation is passed to authorize an expansion of our recreation fee opportunities. If legislation is passed, the net change in Payments to States would be an increase by $61 thousand in FY 1991 and by $464 thousand dollars per year if the test was to continue. Without the recreation fees legislation the Payments to States would decrease by $211 thousand in FY 1991 and by $244 thousand per year if the test was to continue.

The number of jobs available in the timber and recreation sector is an increase over the existing situation, with or without new fees legislation. The increase is greater if legislation is passed. With fees legislation the projected net increase would be by 119 jobs in FY 1991 and by nearly 2,800 jobs by the fifth year. Without legislation the FY 1991 increase would be a modest 8 jobs but by over 2,600 jobs in the fifth year. Although, there is a favorable net increase in the combined recreation and timber job market, timber jobs are affected negatively in each situation. In FY 1991 there would be a loss of about 350 timber jobs and by the fifth year that loss is projected to amount to over 1,100.

With the significant increase in jobs, there is an increase in related income, even though the average income of timber-related jobs tends to be higher per job. The increase, however, doesn't show up until after the first year if there is no legislation for increased recreation fees opportunities. Without legislation there would be a net loss of income in FY 1991 of approximately $1.7 million. By the fifth year, that would change to a gain of about $50 million per year. With fees legislation, there would be a net increase of $800 thousand in FY 1991 and over $51 million per year in future years.

The estimated results vary by forest. It should also be noted that these estimates are necessarily projections using the best information available. The test will attempt to measure actual results.

376. Question: How do the costs associated with timber sales in these national forests compare with costs of offering timber on adjacent private lands?

Answer: We do not have good figures on the cost of selling timber on private lands. However, it is likely that total cost of preparing, offering, and administering a given volume of National Forest timber greatly exceed that experienced by adjacent landowners.

This is due to a variety of factors, including: a) higher standard, therefore, more costly, roads are normally required to meet multiple purpose objectives on National Forest lands; b) detailed analyses and inter-disciplinary reviews are required to comply with NEPA and NFMA; c) harvest operations are normally more widely dispersed and lower volumes per acre are harvested to meet multiple use objectives than would be the case if timber production alone were the objective, resulting in higher unit costs and lower revenues; and d) the cost of administrative appeals and litigation is increasing in many areas. The value paid for private timber is also likely to be greater.

A study was recently done by the Intermountain Research Station to evaluate just the extra cost of meeting non-timber multiple objectives on National Forest sales. This study found that non-timber resource provisions had the effect of lowering bid prices for National Forest timber by about $20 per thousand board feet in the areas studied (Montana, South Dakota, Idaho, Wyoming, Nevada, and Utah). This study found that prices received by the Forest Service for timber would have been about 54 percent higher in these areas had sales been designed on a timber-only basis.

377. Question: As I understand it, you plan to incorporate higher expenditures for recreation activities to mitigate the adverse economic impacts associated with terminating these timber sales. What are the expenditures associated with these recreation activities over the next five years?

Answer: The total proposed recreation and related areas budget for FY 1991 is $252.8 million. Of this amount $10 million is proposed as additional recreation and related funds for the Forests involved in the below-cost timber sale test. The $10 million is divided up into $2.5 million for construction and $7.5 million for operation and maintenance.

Specific recreation budget figures for the test forests have not been formulated beyond the initial test year. For planning purposes, we have continued the $10 million of additional recreation funds per year for the test forests in addition to the return of the recreation fees generated by the proposal. By the fifth year total, annual recreation expenditures would have increased by about $13.4 million if no additional fee authority is legislated, or about $15.3 million with additional fee authorities.

378. Question: Over the long-run, if you compare reduced expenditures for timber offerings, forgone receipts, and the increased expenditures for recreation activities, does this proposal increase or reduce the budget deficit?

Answer: In the first 5 years, the effect of the test would be a minimal increase in the budget deficit. We cannot speculate on the long-term effects as this is one of the purposes of the test.

379. Question: What would be the budget impact over the long-run assuming you do not get your recreation fee legislation enacted?

Answer: The budget impacts would be more favorable with the proposed new fee authorities than without. If the proposed fee legislation is not enacted, recreation receipts and recreation funding would be less.

FOREST ROADS

Last year, on a vote of 55-44, Senator Fowler gained adoption of an amendment that cut the Forest Service's road construction budget by $65 million. A couple of years ago, Senator Proxmire gained adoption of a similar amendment.

A reduction in the road budget leads to budgetary savings in the first year. Over time, however, a reduction of the road budget will constrain future timber sales and lead to a loss of receipts. Over the long-run, reductions in the road budget will increase, not reduce, the budget deficit.

380. Question: What would be the impact on the timber program and annual timber receipts over the next 5 years from cutting the FY 1991 forest road budget by 10 percent?

Answer: A 10 percent reduction of $18.1 million in the Forest Road Program (FRP) will impair the Forest Service's ability to accomplish timber, recreation, and other resource programs in the FY 1991 budget and in future years. The following impacts were determined based on the assumption that the reduced funding level is indicative of future funding levels.

The President's Budget has $181,633,000 in the Forest Road program which supports a timber offer volume of 10.564 BBF in 1991 but will only support a 8.5 BBF offer volume in future years. With a 10% reduction, timber offer volume will drop to 9.7 BBF in FY 1991 and to 7.9 BBF in FY 1992 and beyond.

Timber receipts will not be affected in FY 1991 but will decrease in future years. The total receipts will be reduced by $910 million over the 5 years. However, expenditures for payments to counties of the 25% fund to support local schools and roads will also be reduced by $220 million for the five year period of FY 1991 to FY 1995.

Private sector employment will lose 27,000 person years of work during the next five years.

This reduction will also affect non-timber programs. In 1991, 23 miles of recreation road construction and reconstruction would be eliminated. Some recreation sites programmed for development will not have the required access provided.

In 1991, 170 miles of general purpose road construction and reconstruction would be eliminated. The correction of identified safety and environmental problems on these roads would be deferred.

381. Question: What about 25 percent?

Answer: A 25 percent reduction ($45.4 million) in FRP will cause major changes in the timber, recreation, and other resource programs. The following impacts assume that the reduced funding level is indicative of future funding levels.

Timber offer volume will drop to 8.5 BBF in FY 1991 and to 6.7 BBF in FY 1992 and beyond.

The total timber receipts will be reduced by $1,347 million over the next 5 years. However, expenditures for payments to counties of the 25% fund to support local schools and roads will also be reduced by $340 million for the five year period.

Private sector employment will lose 48,000 person years of work during the next five years.

In 1991, 63 miles of recreation road construction and reconstruction would be eliminated. Twenty percent of the recreation sites programmed for development will not have the required access provided.

In 1991, 220 miles of general purpose road construction and reconstruction would be eliminated.

382. Question: What about 50 percent?

Answer: A 50 percent reduction ($90.8 million) in (FRP) will have traumatic impacts on community, businesses, and individuals interested in timber, recreation, and all other resource programs. The following impacts assume that the reduced funding level is indicative of future funding levels.

Timber offer volume will drop to 5.3 BBF in FY 1991 and beyond.

The total timber receipts will be reduced by $1,838 million over the next 5 years. However, expenditures for payments to counties of the 25% fund to support local schools and roads will be reduced by $460 million for the five year period.

Private sector employment will lose 120,000 person years of work during the next five years.

This reduction will eliminate all proposed appropriated road and bridge construction and reconstruction for FY 1991 and halt the planning and design of all appropriated projects for years beyond FY 1991.

Contract administration on prior year projects will be eliminated which will likely create contract claims. An additional expenditure of $7 million will be made from the remaining funds to cover reduction-in-force (RIF) requirements of about 950 FTE's. This will further reduce the remaining capability. Such a RIF would require 3-6 years to return to the current capability and expertise levels.

The planning and design on about 20 percent of the timber purchaser program (PCP) projects will be deferred.

LAS HUERTAS CANYON RECREATION INITIATIVE (PROPOSED) - NEW MEXICO

My experience with Las Huertas Canyon in the Cibola National Forest goes back many years. When my children were young, my family and I would visit the canyon. We enjoyed the drive and spending the afternoon in the mountains. It was affordable outdoor recreation for a young couple with a growing family.

Over the years, other families have had similar experiences. To this day people still enjoy the natural setting of this canyon with the only year-round, mountain stream within miles of Albuquerque.

Recently, there has been much discussion about the future of the road through the Canyon. The Forest Service has proposed to pave the upper 3-miles the road form the Crest Highway to the picnic grounds and to upgrade the gravel surface from the picnic grounds to Placitas.

I have some concerns about this plan, but I think we should move beyond discussing the fate of the road and address the comprehensive needs of the canyon.

The facilities and resources in the canyon are showing signs of strain. Increasing numbers of visitors, a backlog of maintenance, disagreements over management and other factors contribute to the problem.

It is time to turn this situation around, time for everyone to work together to actively protect and manage the resources and uses of Las Huertas Canyon.

I believe we need a comprehensive recreation initiative for Las Huertas Canyon -- one that does not stop with deciding the fate of the road -- one that is exemplary and that we can all take pride in.

There are many measures to be taken, including:

*Improved visitor and interpretive facilities;
*Increased Forest Service presence;
*Improved law enforcement;
*Better traffic management, parking, and safety;
*Stream and wetland protection;
*Reduced soil erosion'
*Active canyon management volunteers;
*Improved road and facility maintenance, and
*Better 'heavy-use day' management.

383. Question: Does the Forest Service support a comprehensive recreation initiative for Las Huertas Canyon?

Answer: The Forest Service's support for a comprehensive recreation initiative for Las Huertas Canyon is documented in the Cibola National Forest's Land Management Plan and in Management Strategies for Las Huertas Canyon. Both documents were prepared with public involvement and are responsive to resource protection needs as well as providing for increased recreation demands.

QUSTIONS SUBMITTED BY SENATOR WYCHE FOWLER

LAND ACQUISITION

An 815-acre tract of land in Jasper County, Georgia has recently been made available for purchase. This property, which has extended frontage on both the Ocmulgee River and State Highway #16, is located approximately forty miles from both the rapidly growing metropolitan areas of Atlanta and Macon.

384. Question: If this land could be acquired as an addition to the Oconee National Forest, how could it be utilized?

Answer: This acquisition would protect about 1.5 miles of the Ocmulgee River. Approximately 100 acres of ecologically important bottomland hardwoods are included. This area produces osprey, woodducks, deer, turkey, and red-breast sunfish and provides protection of the watershed from imminent development by second-home builders. The property is heavily used by horseback riders. This acquisition would also protect valuable archaeological and historical sites.

QUESTIONS SUBMITTED BY SENATOR JAKE GARN

APPRAISAL PROCESS

385. Question: Forest Service appraisal regulations require that elements of value which the federal government may create, has created, or which it may have destroyed by the exercise of Governmental authority may not be considered in determining the value of property. Within the frame work of this regulation why would an appraisal include a risk assessment element?

Answer: A risk assessment does not evaluate elements of value created or destroyed by the exercise of federal authority. Anytime a property with development potential is appraised, some risk is involved. Evaluation of such risk would occur whether or not the Federal government was associated with the property.

386. Question: Would such a risk assessment appropriately take into consideration any local or state action taken in direct response to the exercise of federal authority?

Answer: No.

387. Question: Are risk assessments required to include legal analysis, or can hypothetical and extra-legal risks be considered?

Answer: Evaluation of risks may or may not require legal analysis. However, if the required action is either highly speculative or very complex, legal issues would invariably have to be addressed to properly consider the degree of risk associated with realizing the highest and best use of the property.

388. Question: How would a risk assessment element of an appraisal appropriately take into consideration the fact that the property being appraised is included in a federally designated a wilderness area?

Answer: The Uniform Appraisal Standards for Federal Land Acquisitions, 1973, directs that an appraisal should include no allowance for enhanced or diminished value of the property attributable to or resulting from the public use or purposes for which the land is to be acquired. Consequently, inclusion in a Federally designated wilderness area would not be addressed in the risk evaluation.

389. Question: The Wilderness Act provides for protection of valid existing rights and reasonable access to those rights. If property is included in a wilderness area, should a Forest Service appraisal take into consideration conditions which could be placed upon the exercise of valid existing rights or the problems the owner might encounter with access to those rights by federal, state or local action?

Answer: The availability of access would be among the assumptions the appraiser would be directed to consider. Reasonable access would be assumed to be available. However, access controls by non-Federal jurisdictions unrelated to wilderness designation would also be considered.

390. Question: The Forest Service appraisal review system is designed to protect the appraiser, the line officer, and the public by providing an independent, technical analysis of the adequacy of the value conclusions and documentation supporting those conclusions. What is done in the appraisal review process to protect the private owner of the property?

Answer: The appraisal process determines whether the appraisal meets Federal standards and properly estimates the fair market value of the estate appraised. This protects all parties to the transaction and the public.

391. Question: Is it appropriate for the owner of the property to request that the appraisal price be kept confidential during the negotiation process? Would the Forest Service ever deny such a request? If so, under what circumstances? And how would they ensure protection of the owner's right in the process?

Answer: Forest Service policy is to keep such information confidential until negotiations are complete.

392. Question: Is it ever appropriate for local publicity, political motivation, or emotional rhetoric to enter into the Forest Service appraisal process?

Answer: No.

QUESTIONS SUBMITTED BY SENATOR MARK HATFIELD

FOREST RESEARCH

Unlike many of the Forest Service's program which have been under heavy fire in recent months, your research programs have been a major success. Accordingly, I was alarmed to see that the President's FY 1991 budget recommends an inordinate number of reductions in forest research in the Pacific Northwest.

393. Question: Can you please explain what greater budgetary priorities have caused these recommended reductions?

Answer: The President's Budget contains six priority research programs: global change, enhancing forest-based economies in rural America, water quality, southern forest productivity, threatened and endangered species, and catastrophic forest fires. These are among the most critical natural resource issues facing the Nation and world today. The President's budget focuses $62.961 million--$15.3 million above the FY 1990 appropriation level (after Deficit Control Act sequestration)--on these priority programs. The increased funding will accelerate ongoing research and initiate new research on these critical problems. In this era of limited funding for new initiatives, only $3.5 million of the increase in priority program funding requested by the President is new money; $11.8 million was redirected from the broad array of programs that form the foundation for Forest Service Research.

The magnitude of the funding increases illustrate the relative priorities among the priority research programs. Global change research would increase $6.9 million, boosting the Forest Service funding level to $23 million; 49 percent of the Department's global change program. Research to help rural communities enhance and diversify their local forest-based economies would increase $4.8 million. Work on the cumulative effects of land management actions on water quality would increase $2 million. Research to improve the productivity of southern forests would increase $1.1 million. Threatened and endangered species research would increase $0.4 million. Catastrophic fire research funding would not receive a significant increase over the FY 1990 funding level.

NEW PERSPECTIVES MANAGEMENT - REGION 6

394. Question: Please describe the status of new perspectives management in Region 6. How would you characterize the level of professional and academic acceptance or uncertainty about the wholesale adoption of this kind of management technique?

Answer: Both New Perspectives for Managing the National Forest System and the companion priority research program entitled, Developing an Ecological Perspective for Managing Forests, are evolving nationwide programs. The Pacific Northwest Research Station and Region 6 are jointly developing a part of this program, "New Perspectives: An Ecological Path for Managing Forests." This regional program is bringing together researchers, managers, and the public to develop and demonstrate this ecosystem approach. These programs are generating a tremendous amount of interest and support in the Pacific Northwest as well as throughout the Nation. Academicians, researchers, and National Forest System personnel view the effort very positively and are anxious to become involved.

395. Question: In terms of scientific methodology (hypothesis, testing, application), is the Forest Service prepared to direct implementation of the many changes in priorities taking place in Region 6?

Answer: Yes. Since passage of NFMA in 1976, Forest Service Research has greatly expanded our understanding of how natural ecosystems function. A major goal of the New Perspectives effort is to build a stronger scientific basis for managing lands and resources. We have already started with the national priority research program and the PNW/Region 6 New Perspectives effort.

396. Question: In light of the many changes in priorities taking place in Region 6, isn't an increase in forest research funding, notably for new perspectives management research, appropriate?

Answer: At present, this new program developed in response to the Chief's New Perspectives initiative will be mainly supported by some reorienting of existing funds in FY 1991.

397. Question: There is no question that other forest amenities, other than timber harvesting, are receiving more and more attention from the Congress and the public. Accordingly, why are important research programs such as COPE, which deals with soil, water, and other forest resources, being slated for reduction in the FY 1991 budget?

Answer: The FY 1991 Forest Service Research program in the Pacific Northwest Station addresses the highest priority research needs within the President's budget. This includes reorienting funds from existing programs to implement New Perspectives research and development activities. The President's budget still provides $825,000 for COPE in FY 1991.

SPOTTED OWL/OLD-GROWTH RESEARCH

398. Question: For FY 1990, the Appropriations Committees provided $1.17 million for spotted owl research, and $1.051 million for the Old Growth Management R&D Project and other old growth research. Please update the Subcommittee on the progress of this research. What funding levels, if any, are necessary for these programs in FY 1991?

Answer: The Forest Service has prepared a report to Congress on the increases in FY 1990 to: (1) Initiate an old-growth management, research, and demonstration project, and (2) accelerate spotted owl research. Continued funding at the FY 1990 level would permit us to accelerate field work and publication of old-growth research results in FY 1991. At present, we believe that the current level of funding for spotted owls (approximately $3,000,000) will be adequate. A copy of our report to House and Senate Committees is attached.

USDA FOREST SERVICE REPORT ON FISCAL YEAR 1990 FUNDING INCREASES TO THE FOREST SERVICE

FISCAL YEAR 1990 FUNDING INCREASES FOR OLD-GROWTH AND SPOTTED OWL RESEARCH

This report is submitted with reference to the Managers' request on page 45 of the Conference Report for the FY 1990 Appropriation:

"Included within the total funding provided is an increase of $1,051,000 for old growth research, including $750,000 to initiate the old growth management research and demonstration project; and an increase of $1,170,000 for accelerating spotted owl research. The managers request that the Forest Service provide the Committees with a report describing the expected products and timelines for completion of field research and publication of results from the old growth and spotted owl research efforts. The Forest Service should also include estimates of funding necessary to accelerate publication of final reports."

OLD-GROWTH MANAGEMENT RESEARCH AND DEMONSTRATION PROJECT

The $1,051,000 added to the Forest Service Research budget for old-growth research is being used to:

- Analyze forest fragmentation and landscape-level influences on wildlife communities in the Oregon Coast Range and Washington Cascades.

- o Investigate responses of selected old-growth associated wildlife species to variation in amount of fragmentation of managed forest landscapes.

- o Develop a new approach for determining optimum allocation of habitat types to meet multi-species wildlife objectives.

- o Remeasure a 50-year-old permanent plot study of old-growth, eastside ponderosa pine under differing harvesting levels, and document soil fertility as affected by different levels of cutting. Determine the spatial patterns of natural openings in old-growth forests at the stand and landscape levels.

- o Analyze research needs for assessing alternative silviculture practices in the Douglas-fir region.

- o In cooperation with the University of Washington and Oregon State University, assess research needed to understand the community, social, and cultural values of managing old growth.

- o Identify forest stands suitable for retrospective studies of responses to alternative silviculture practices.

- o Analyze timber supply issues associated with alternative stand and landscape management practices, and develop a process for economic evaluation of silvicultural alternative.

- o Initiate integrated landscape management research to develop, evaluate, and demonstrate alternative strategies.

I. Planned Research Accomplishments in FY 1990:

A. Problem analysis identifying critical research needed to assess alternative silvicultural practices in the Douglas-fir region.

B. Stand selection for retrospective studies of responses to alternative silvicultural practices will be completed, additional funds will be required for measurement and analyses.

C. Preliminary economic evaluation of management scenarios and timber supply issues under New Perspectives in Forestry.

D. Preliminary research plan to test and evaluate landscape-level management alternatives.

E. Video tape to display New Perspectives in Forestry concepts and demonstrate early results from application to old-growth forests.

F. Publication of the proceedings from the symposium on "old-growth Douglas-fir Forest: Wildlife Communities and Habitat Relationships" held March 29-31, 1989 in Portland, OR. The publication will include 37 papers on wildlife and vegetation of unmanaged Douglas-fir forests in Oregon, Washington, and northern California.

II. Expected Products in FY 1991 with Existing Funds:

A. Publication describing the growth and development of old-growth ponderosa pine 50 years after partial cutting and an approach for characterizing openings in mixed conifer old-growth forests.

B. A comprehensive assessment of studies needed to understand the social component of managing old-growth stands under the "New Perspectives in Forestry."

C. Interim guidelines for old-growth Douglas-fir management emphasizing minimum forest fragmentation.

D. Literature review of ecological effects of green-tree retention in harvested stands and variation in canopy closure on composition, structure, and function of Pacific Northwest forests.

E. Determination of microclimatic changes in old-growth stands associated with edges of clearcuts.

F. Publication on the timber supply issues associated with implementation of alternative stand and landscape management practices.

G. Two publications describing responses of wildlife to forest fragmentation and variation in landscape-level influences.

H. Publication describing a new approach for determining optimum allocation of habitats to meet multi-species wildlife objectives.

III. Products Accelerated for Completion in FY 1992:

A. Determining recruitment rates and longevity of snags in partially-cut old-growth stands of ponderosa pine.

B. Evaluating the significance of down, coarse, woody debris to soil fertility of eastside pine ecosystems 50 years after partial cutting.

C. Characterization of natural openings and relationships to fragmented aggregation, stands, and landscapes for the ponderosa pine, true fir, and Klamath Mountain Douglas-fir type.

IV. Funding Necessary to Accelerated Publication of Final Reports:

Continued funding at the FY 1990 level would permit us to accelerate field work and publication of products expected in FY 1991 and support the development and publication of products described for completion in FY 1992.

DISTRIBUTION OF FY 1990 FUNDING INCREASES FOR OLD-GROWTH MANAGEMENT RESEARCH AND DEMONSTRATION PROJECT

Capability Increase List (10/6/89)	($1,000)	Narrative
FER #11, PNW-4203 Olympia, WA	$106	Restore research on wildlife habitat relationships in old growth forests (WRFHR).
FER #14, PNW-4203 Olympia, WA	$195	Restore research into the contribution of old growth forests to ecological diversity and habitat stability (WRFHR).
TMR, PNW-4103 Olympia, WA	$150	Initiate old growth management research and demonstration project.
TMR, PNW-4356 Corvallis, OR	$300	Initiate old growth management research and demonstration project.
TMR, PSW-4101 Redding, CA	$300	Initiate old growth management research and demonstration project.
	$1,051	

ACCELERATED NORTHERN SPOTTED OWL RESEARCH

An additional $1,170,000 was added to the Forest Service Research budget to accelerate spotted owl research. These funds are being used to:

- o Continue research on demography and habitat use of the northern spotted owl in the Oregon Cascades.
- o Continue and accelerate research on the northern spotted owl in western Washington and Oregon.
- o Continue and accelerate research on the northern spotted owl in the Klamath province of northern California and southwestern Oregon.
- o Initiate research on northern spotted owl habitat use and demography as related to timber management in eastern Washington.
- o Continue and accelerate research on the California spotted owl in the Sierra Nevada.
- o Initiate research on the Mexican spotted owl in Arizona and New Mexico.

This funding restores and augments our ongoing research efforts under the Spotted Owl RD&A Program. Research results from new studies will not be available for 2-10 years. Funding must continue over that period to maintain the studies initiated in FY 1990 if results are to be meaningful.

I. Planned Research Accomplishments in FY 1990:

A total of $3,113,000 is allocated for spotted owl research in FY 1990 (including the $1,170,000 add-on). These dollars will fund 27 studies on spotted owl populations, habitats, and prey; 13 of these studies are being initiated in FY 1990.

Some of the field studies begun in 1986 and 1987 are completed or will be completed in FY 1990. This information has been extremely valuable to (1) the Interagency Spotted Owl Committee of Scientists in the preparation of their conservation strategy and (2) to the U.S. Fish and Wildlife Service's team that is considering the evidence on whether listing of the northern spotted owl as threatened is warranted.

Specific accomplishments in FY 1990 include:

A. Three publications on the northern spotted owl appeared in January, 1990 issue of the Journal of Wildlife Management. These papers dealt with the density of northern spotted owls in northern California, home range size and habitat use in the Oregon Coast Ranges, and the demography of spotted owls in the Pacific Northwest. These studies were wholly or partially funded by Forest Service Research dollars.

B. Final report on study of northern spotted owls and impact of competition from barred owls in the Northern Cascades.

C. Complete field work on home range size and habitat use of spotted owls on the Olympic Peninsula of Washington and the effects of fragmentation on spotted owl reproduction.

D. Final report on telemetry study of the northern spotted owl habitat use and home range size in northwestern California.

E. Final report on habitat use and home range size of northern spotted owl on the Oregon coast range.

II. Products Produced by End of FY 1991 with Existing Funds:

A. Publications on research completed in FY 1990 (items I. B-E above).

B. Final report on the dependency of spotted owls and their prey on mistletoe in eastern Washington.

C. Final report on home range size and habitat use by northern spotted owls on the Wenatchee National Forest.

D. Final report on telemetry study of California spotted owl habitat use and home range size in the Sierra-Nevada.

E. Publications on habitat relationships of major prey species of the northern spotted owl.

F. Publications on population models for northern spotted owls.

G. Development of a spatially related spotted owl population model with linkage to Geographic Information System.

III. Products Accelerated for Completion by the End of FY 1992:

A. Final report on northern spotted owl habitat use and home range size in eastern Washington managed forests.

B. Final report on efforts to develop silvicultural prescriptions to improve spotted owl habitat in eastern Washington.

C. Final report on demography of the California spotted owl on the Eldorado National Forest in the Sierra-Nevada.

IV. Accelerated Funding Required:

At the present time, we believe that the current level of funding for spotted owls (roughly $3 million) will be adequate to address the new research questions that will arise if the Interagency Committee's strategy is implemented (not including Mexican spotted owl research needs). If this happens, the current spotted owl research program will be reevaluated and redirected where necessary to address important research questions. Research initiated in FY 1990 on the Mexican spotted owl is not included in the $3,024,000 funding for FY 1991. If this research is to continue, the $150,000 appropriated in FY 1990 would need to be restored in FY 1991.

DISTRIBUTION OF FY 1990 FUNDING INCREASES FOR ACCELERATED NORTHERN SPOTTED OWL RESEARCH

Capability Increase List (10/6/89)	($1,000)	Narrative
FER #15, PNW-4204 Portland, OR	$70	Accelerate research on demography and habitat use of spotted owl in the Oregon Cascades (WRFHR) (I-TES)(E-OG).
FER #17, PSW-4251 Arcata, CA	$250	Accelerate research on spotted owls in the Klamath Province (WRFHR)(I-TES)(E-OG).
FER #28, PNW-4354 Wenatchee, WA	$150	Initiate research on spotted owl habitat use and demography as related to timber management in eastern Washington (WRFHR)(I-TES)(E-OG).
FER, RM-4251 Tempe, AZ	$150	Initiate research on spotted owl.
FER, PNW-4203 Olympia, WA	$250	Accelerate research on spotted owl.
FER, PSW-4202 Fresno, CA	$300	Accelerate research on spotted owl.
	$1,170	

BLUE MOUNTAIN NATURAL RESEARCH INSTITUTE

I have been approached by various elected officials and citizens from both Oregon and Washington regarding the proposed Blue Mountain Natural Research Institute.

399. Question: Please provide the Subcommittee with a description of this proposed program; its relationship to regional research priorities; and the geographic areas which will benefit from this type of research.

Answer: The proposed Blue Mountain Institute would provide information for the resolution of forest and rangeland natural resource issues in northeastern Oregon and southeastern Washington. It would also provide leadership to develop and implement the wider Interior Forest and Rangeland Research Development and Application (RD&A) Program proposed by the Pacific Northwest Station. It will provide increased opportunities for partnerships. The current Forest Service Research units at the LaGrande, OR Forest and Range Sciences Laboratory would provide the core science programs for the proposed Institute, with contributions from the Bend, OR, Silviculture Laboratory and the Wenatchee, WA, Forest Sciences Laboratory. The programs would benefit most ecosystems in Oregon and Washington east of the Cascades. In essence, the proposed Institute would provide a better way to focus attention on eastside problems, develop partnerships with eastern Oregon and Washington Universities and Colleges, and integrate studies that, heretofore, were conducted separately.

400. Question: Also, what level of funding would be necessary for the first year of this program?

Answer: Two million dollars has been identified as needed to establish and operate the Institute during the first year. The President's FY 1991 budget proposes significant increases in a number of programs within the Forest Service, while supporting efforts to reduce the Federal deficit in accordance with Gramm-Rudman-Hollings targets. Any increase above the President's Budget request will need to be offset by corresponding reductions in other projects or programs so that deficit reduction targets can be met.

To put this proposed funding level into perspective, the President's Budget contains a total of $1.589 million for the two units at LaGrande, OR, which are the core units for the proposed Institute. In addition, the FY 1991 President's Budget provides $570,000 for the unit at Bend, OR, and $790,000 for the unit at Wenatchee, WA, both of which would contribute a portion of their work to the Institute. Therefore, establishing the Institute would roughly double the current funding level in the President's Budget for eastside research.

ECONOMIC DIVERSIFICATION

In FY 1990, the Appropriations committees provided $500,000 for economic diversification studies.

401. Question: Please provide the Subcommittee with a detail of how these funds were utilized.

Answer: Of the $500,000 appropriated, $6,000 was sequestered, $25,000 was used for program administration, and $469,000 was used to fund studies. We received 70 proposals for consideration and were able to fund 10. The following studies were selected:

Southwest Alaska	$65,000
Plumas County, California	20,000
Jackson County, Colorado	40,000
Clearwater Valley, Idaho	49,000
Winn Parrish, Louisiana	60,000
Beaverhead County, Montana	38,000
Northwest Montana	47,000
Catron County, New Mexico	30,000
Southwest Oregon	60,000
Forks, Washington	60,000
Total	$469,000

402. Question: Which areas of the country received these funds?

Answer: Please refer to the response in the previous question.

STEWARDSHIP INITIATIVE

403. Question: Please provide the Subcommittee with an assessment of your Stewardship Initiative which was funded at $6 million in FY 1990.

Answer: We are preparing an assessment of the accomplishments to date for the Stewardship Initiative, which we expect to complete by mid-May. Copies of the report will be provided to the Subcommittee. The following highlights some of the accomplishments based on preliminary information:

- About 40 States have established formal stewardship committees which will provide advice to the State Foresters and help implement stewardship plans.
- Almost all of the State committees have representation from outside the State forestry organizations, forest industry, State Soil and Water Conservation Districts, environmental organizations, other State and Federal agencies (e.g., Extension Service, Soil Conservation Service), and landowner associations;
- The Stewardship Initiative is helping meet national forest management goals as well as allowing States to identify resource issues, set priorities, and work cooperatively at the State and local level with agencies, organizations, and individuals to address and resolve concerns.

404. Question: Has progress been made in increasing forest productivity on private non-industrial forest lands?

Answer: The Stewardship plans that have been developed during FY 1990 provide the foundation for an integrated approach to improving landowner awareness and for improving the management and productivity of non-industrial privately owned forestlands. Implementation of the plans is now underway, and results will occur over the next several years.

PEST MANAGEMENT - REGION 6

405. Question: Please provide the Subcommittee with an assessment of the forest pest situation in Region 6.

Answer: Bark beetle outbreaks continue in Eastern Oregon and Washington. Bark beetles killed an estimated 1.1 million trees (about 73.5 million cubic feet) on 2.3 million acres in 1989. The bark beetle outbreaks are closely related to stress from three consecutive years of drought and competition stress in overstocked stands.

Regionwide, western spruce budworm defoliation declined from 4.1 million acres in 1987 to 2.9 million acres in 1988 and 1.8 million acres in 1989. This decrease has not been uniform across the region. Defoliated acres decreased 49 percent in Oregon, but increased 63 percent in Washington. In 1990, spruce budworm suppression is planned on 66,000 acres of the Yakima Indian Reservation and 5,300 acres of adjacent and intermingled private lands in Washington.

In Washington, two gypsy moth infestations, one each in Clark and Kitsap Counties, are a concern. Treatment is planned for the Clark County infestation in FY 1990. The Kitsap County infestation is being intensively monitored to determine if earlier eradication efforts were successful. No gypsy moth infestations are known in Oregon at this time.

Root diseases continue to be among the most serious pest problems in Oregon and Washington because of the magnitude of losses they cause and the difficulty of their treatment. Approximately 3 million acres are root disease-infested with annual losses estimated to be over 180 million cubic feet.

Dwarf mistletoes are present on about 9.5 million acres and caused an estimated loss of about 131 million cubic feet of timber in 1989. Pest management specialists are working with forest managers to implement silvicultural procedures to reduce the impact of these diseases.

406. Question: Do you expect any major outbreaks of insects or other pests in the Pacific Northwest in the near future?

Answer: We are closely monitoring an outbreak of Douglas-fir tussock moth on the Wallowa-Whitman National Forest in Eastern Oregon. The defoliation leveled off in 1989, but the potential for serious defoliation still exists. Bark beetle populations will continue at high levels in Eastern Oregon and Washington until drought conditions ease. Substantial areas of outbreak-level western spruce budworm populations are expected in 1991 in Eastern Oregon and Washington.

407. Question: If so, does your budget accurately reflect your needs to fight the pests?

Answer: Yes, for Federal lands all needs are reflected in the budget unless we have an unexpected emergency. On non-Federal lands, State and private landowners will be responsible for the entire cost of pest suppression on their lands.

SECONDARY WOOD PRODUCTS

408. Question: What are the Forest Service's activities with regard to promoting increased activity in the secondary wood products manufacturing industry in the Pacific Northwest?

Answer: Although our efforts in this are somewhat limited, the Forest Service participated with the World Forestry Center and others in establishing a Wood Products Information Center to gather and disseminate information on the latest available technologies of wood processing, including secondary processing. We also funded an economic diversification study in 1989 with the Oregon State Department of Forestry which developed "A Strategic Marketing Plan For Expanding Value-added Wood Product Manufacturing in Western Oregon." This report was completed in December, 1989, and has received wide distribution. The two economic diversification studies funded in the Pacific Northwest in 1990 should also identify ways of promoting increased activity. Additionally, as the Pacific Northwest Strategy continues, it will be a source to identify many opportunities for increased activities in this industry.

409. Question: What further steps should be taken to encourage this type of activity?

Answer: Adding Federal and State utilization and marketing and rural development specialists would permit more technical assistance to private landowners, industries, and communities. Also, additional diversification studies could be very beneficial. However, the President's 1991 Budget proposes significant increases in a number of programs within the Forest Service while supporting efforts to reduce the Federal deficit in accordance with Gramm-Rudman-Hollings targets. Any increase above the President's Budget request will need to be offset by corresponding reductions in other projects or programs so that deficit reducetion targets can be met.

PACIFIC NORTHWEST STRATEGY

410. Question: Please describe for the Subcommittee the Region 6 initiative known as the "Pacific Northwest Strategy".

Answer: This is the Region 6 approach to the Forest Service rural development strategy, providing technical assistance to timber or other resource dependent communities. It involves the coordination of existing economic development programs and assistance to the communities in gaining access to Federal programs. It is a vehicle for delivering programs to increase emphasis of the manufacture of value-added wood products, marketing assistance, stewardship on nonindustrial private forest lands, revitalization of rural areas, better utilization of wood, and other programs that help resource dependent communities. This involves our Forest Service employees extensively in public service activities.

411. Question: How do you envision this effort being implemented?

Answer: The Region, working with the Steering Committee, will help form partnerships focused on identifying and coordinating community and Federal resources to help resource dependent communities prepare for and achieve their desired future.

412. Question: What statutory or regulatory changes would you recommend to allow the project to function as you envision it?

Answer: We believe that current authorities are adequate.

OREGON WILD AND SCENIC RIVERS

In 1988 the Congress passed the Omnibus Oregon Wild and Scenic Rivers Act. This legislation added segments of 40 rivers to the National Wild and Scenic Rivers System. According to the Wild and Scenic Rivers Act of 1968, the federal managing agencies have three years to complete the management plans for federally designated rivers.

413. Question: Please provide the Subcommittee with a progress report on your efforts to complete the management plans on the Forest Service's segments of the Oregon rivers.

Answer: At the Regional level, the Forest Service is working with an Interagency Wild and Scenic Rivers Team (Forest Service, BLM, and State Parks) to coordinate the statewide planning effort. There are 10 river planning teams operating in the state. All are in the beginning stages of the river planning effort. Most teams have completed the initial step of assessing resource values for individual rivers (the "resource assessment" process) for at least one river. Assessments will be completed on several rivers by late spring and some forests have conducted public hearings for scoping and information purposes.

414. Question: How much money was allocated to this project in FY 1990?

Answer: The Region allocated $980,000 in FY 1990.

415. Question: Do you have any doubt that the management plans will be completed within the three year time limit?

Answer: We anticipate completing the majority of river management plans designated via the "Omnibus Oregon Wild and Scenic Rivers Act" by the fall of 1992 which would be three full fiscal years from date of enactment. However, a limited number of rivers with significant acreage of private land and requisite intensive public involvement may extend beyond 1992.

416. Question: What levels of funding are necessary to ensure that the management plans are completed in a timely fashion?

Answer: The Region has estimated a need for $2.2 million in FY 1991. No Recreation Management funds were programmed in the FY 1991 budget proposal as it was formulated prior to the passage of the Oregon Omnibus Wild and Scenic Rivers Act. However, of the total Recreation Management funds in the President's Budget, it is anticipated that about $980,000 would be utilized in studying and planning for Wild and Scenic Rivers in Oregon. This requires that Region 6 divert some of the funding from lower priority recreation management activities to accomplish this work.

FIREFIGHTING

417. Question: According to the reports that I have received, it is highly possible that the summer of 1990 may be a bad fire year in the Pacific Northwest. What steps are being taken now to minimize the possibility of forest fires?

Answer: The areas of emphasis are the prevention of man-caused fires and increased level of pre-season preparedness for initial attack firefighting resources. A highly visible prevention program is underway and we are actively working with State and local fire departments to increase public awareness, focusing on areas of high fire potential.

Anticipating a severe fire season, we completed pre-season agreements for suppression resources, increased hand crew availability, and contracted engines to bolster Forest Service engine coverage. We are training loggers and mill workers for reinforcement fire suppression. In addition, we will use fire severity funding to provide additional airtankers, smokejumpers, helicopters, and ground resources; increased detection; and earlier manning dates for regular firefighting resources.

418. Question: Do you have an estimate of how much money will be required for fire suppression this summer?

Answer: As of March 31, 1990, nation-wide fire suppression costs were $13.1 million, which is $23.6 million less than the suppression costs at the same time last year. Predicting actual suppression expenditures for an individual year is not possible due to the uncertainty of weather influences and the inability to precisely predict where and when fires will occur. However, using the National Fire Management Analysis System, which estimates suppression costs based on a level of fire presuppression funding, and a normal year of fire activity, we can expect at least $118 million in fire fighting suppression costs.

HELLS CANYON NATIONAL RECREATION AREA

419. Question: A recent GAO report provided a rather dismal view of the Forest Service's management of the Hells Canyon National Recreation Area. What are you doing to turn this situation around?

Answer: A total of $374 thousand in both road construction and facility construction funds has been scheduled for the Pittsburg Landing recreation complex in FY 1990. An additional $1.1 million has been scheduled to construct 16 miles of the Hat Point Road. An interpretive overlook will be constructed in FY 1990-1991 using recreation challenge cost-share funds. In FY 1991, $1.766 million will be used for further phased construction of the Pittsburg Landing recreation complex.

Completion of these projects should address most of the substandard access road issues mentioned in the GAO report.

420. Question: Does your FY 1991 budget provide adequate funds to begin remedying the neglect that has occurred over the years?

Answer: The President's FY 1991 Budget includes funds that would be used by Region 6 and the Wallowa-Whitman National Forest to improve facilities at Hell's Canyon NRA. Additional needs have been identified, but are subject to funding within the constraints of available funds and other national and regional priorities.

REFORESTATION AND TIMBER STAND IMPROVEMENT

421. Question: You are seeking a $12 million decrease from your base for Reforestation and Timber Stand Improvement in your FY 1991 budget. Please provide the Subcommittee with an explanation for this reduction.

Answer: Although we have requested less appropriated funding for reforestation and timber stand improvement, the budget envisions the largest total program in terms of acres in history, not a reduction. We plan to reforest very significant acres of burned over lands for which unit costs are greatly reduced.

422. Question: What is the request for Region 6 for FY 1991?

Answer: Region 6's reforestation and timber stand improvement program in the FY 1991 President's Budget is $25.3 million.

423. Question: What is the current reforestation backlog in Region 6 and what level of funding is required to eliminate the backlog?

Answer: The Region eliminated the reforestation backlog in FY 1985 after completion of a Congressionally-funded program. The Region has current needs for reforestation that are scheduled into an appropriate year for treatment. To date we have always had sufficient funding in the annual budget to complete the current years scheduled reforestation.

OLD GROWTH INVENTORY PROJECT

424. Question: Please provide the Subcommittee with a progress report on your old growth inventory project.

Answer: The Region has been gearing up to complete the inventory as rapidly as possible. This has meant an increase in contract work, hiring of additional inventory crews, and accelerating the collection of data.

425. Question: When can we expect to see it finished?

Answer: The interim old-growth inventory for northern California, western Oregon, and western Washington National Forests will be finished in October of 1990.

SPOTTED OWL SURVEY AND MONITORING

For FY 1990, the Appropriations Committees provided you with $3 million for spotted owl surveys and $1 million for spotted owl population monitoring.

426. Question: Please provide the Subcommittee with a description of these projects.

Answer: The additional FY 1990 funds provided for initiating and accelerating spotted owl population and habitat inventories and monitoring in Colorado and Utah. In Arizona, New Mexico, California, Oregon, and Washington, funds were used to accelerate inventorying and monitoring, initiating new spotted owl habitat inventories on the Olympic National Park, and strengthening cooperative spotted owl study efforts with states, federal agencies, and the Yakima Indian Nation.

A system of Spotted Owl Habitat Areas (SOHA's) has been established throughout the ranges of the Northern spotted owl and the California spotted owl in the Sierra Nevada Mountains.

Colorado: ROCKY MOUNTAIN REGION

Monitoring. ($25,000) (FY 1989-1990)

Six sites will be monitored to determine if pairs are present, nesting is occurring, young are fledging, and to develop a general habitat characterization. Preliminary work will be done to determine if territories can be defined and SOHA's established. This determination will be started in FY 1990 and will take several years of monitoring to finalize. The Rocky Mountain Station is cooperating with this effort.

Inventory. ($75,000) (FY 1989-$38,000)

Approximately one third of the potential habitat for spotted owls was inventoried during 1989. Much of this area will be reviewed to confirm the preliminary findings. Remaining two thirds of potential habitat will be inventoried to determine if owls are present. Three Forests are involved. Coordination is being done with the Rocky Mountain Station and with Region 3 in this effort.

Arizona and New Mexico: **SOUTHWESTERN REGION**

Monitoring. ($100,000) (FY 1989-$25,000)

Continue formal impact monitoring previously started on 15 sites in the Region. Increase sample size of impact monitoring to at least 60 sites, and evaluate control sites from territories found in non-activity areas during FY 1990 inventory. Continue informal monitoring on 65 sites to determine occupancy and reproduction. Increase sample size to over 100 informal monitoring sites. Begin trend monitoring on one site and evaluate potential methods of double sampling to reduce monitoring costs and improve sampling in all provinces.

Inventory. Populations. ($300,000) (FY 1989, $79,000 timber receipts)

Inventory areas where no activities are proposed to determine presence of owls. An estimated 300,000 to 400,000 acres will be inventoried for owls, including reserved lands, lands unsuitable for timber production, and lands where activities occurred more than 5 years ago.

Utah, California, and Nevada: **INTERMOUNTAIN REGION**

Spotted Owl habitat inventory, population inventory and population monitoring will occur on the Dixie National Forest, Fishlake National Forest, Toiyabe National Forest, and Manti-LaSal National Forest in FY 1990.

Monitoring. ($50,000) (FY 1989-1990)

Initiate monitoring at known owl sites. Develop protocols and techniques needed for conditions common to this area. The majority of this effort will be done on the Toiyabe National Forest to monitor confirmed nesting spotted owls. Work will be started on the Dixie National Forest in conjunction with the several confirmed nesting pairs that surround the Forest on National Park Service lands.

Inventory. Populations. ($100,000) (FY 1989, $35,000)

Inventory areas to determine presence of owls in areas of potential habitat. In FY 1990 approximately 30% of the population survey needs for the four forests will be completed. Owls have been located on the Toiyabe National Forest and in the Zion and Capital Reef National Parks bordering the Dixie National Forest.

California. **PACIFIC SOUTHWEST REGION**

Monitoring. ($1,250,000) (FY 1989-$956,000)

Monitor an estimated 329 sites (1,000 acres each) throughout the state. (See FY 1989 R-5 Monitoring Report, 12/20/89, for detailed information on this effort).

Inventory. Populations. ($400,000) (FY 1989, $182,000 timber receipts)

Some areas with historic owl use have not contained known pairs for the past few years. Inventory of 106 sites and proximate areas are needed to strengthen the SOHA network. Inventory efforts on southern California Forests are 80% complete on the San Bernadino NF and 50% complete throughout remaining area.

Studies. ($170,000)   (FY 1989-$110,000)

These funds will initiate a cooperative administrative study with the Sequoia National Park and provide for strengthened cooperation between the State of California and the Forest Service.

Oregon and Washington: **PACIFIC NORTHWEST REGION**

Monitoring. ($1,195,000)   (FY 1989, $900,000)

All SOHAs, 370, will be monitored which will allow for refining the SOHA network and providing improved data for all of the designated SOHAs. Population trends will continue to be investigated by monitoring 140 random sample areas and 50 reserved network sites (RNS).

Inventory. Populations. ($350,000)   (FY 1989, $100,000)

Spotted owl inventory work will be done on the east side of the Cascades to determine the range. The Okanogan and the Deschutes National Forests have identified additional spotted owl habitat acres. Spotted owl occurrence will be determined in those areas. Additional inventory on reserve lands will be continued with emphasis on those lands that are critical to the spacing of designated SOHA's.

Other Cooperative Activities. ($65,000)   (FY 1989-1990)

Inventory work is needed on the Olympic National Park. Areas to be inventoried will be jointly agreed upon by the Park and the Forest Service.

427. Question: What is the level of funding needed to continue them in FY 1991?

Answer: Currently the Forest Service spotted owl management program is operating in 5 Regions: Pacific Northwest (Oregon and Washington), Pacific Southwest (California), Southwest (Arizona and New Mexico), Intermountain (Nevada and Utah), and the Rocky Mountain (Colorado).

Activities are conducted in monitoring, population inventory, habitat inventory, administrative studies, and special projects (includes cooperative studies with National Park Service, Yakima Indian Nation, States, and spotted owl management aspects in New Perspectives studies.)

Funds to operate this Program in FY 1991 are estimated to be:

Monitoring	$4.3 million.
Population Inventory	$3.2 million.
Administrative Studies, Special Projects	$1.5 million.
Total	$9.0 million.

On April 4, 1990, an Interagency Scientist Committee provided a report titled: "A Conservation Strategy for the Northern Spotted Owl." Decisions to implement that strategy are pending. It is estimated that an additional $4.22 million will be needed to initiate implementation. Most of the additional funds would be needed to conduct population inventories. At [illegible] end of three years these inventories would be completed and costs to monitor would approximate the current levels.

GEOGRAPHICAL INFORMATION SYSTEM

Recent efforts to assess the effect of the Thomas Interagency Scientific Committee's proposed spotted owl conservation plan clearly underscored the extraordinary usefulness and value of the Geographical Information System (GIS).

428. Question: Please provide the Subcommittee with a status report on the acquisition and implementation of the GIS.

Answer: The Forest Service is well prepared to proceed with the acquisition and implementation of GIS capability. The General Services Administration (GSA) approved a delegation of procurement authority (DPA) for this acquisition on December 22, 1989. Prior to getting the DPA from GSA, five Department of Agriculture offices as well as GSA analyzed and reviewed the proposed acquisition. These organizations approved the documentation as meeting the requirements of Departmental and GSA regulations.

The Forest Service announced its intent to procure GIS capability in the Commerce Business Daily on March 13, 1990. The Service was prepared to release its Request for Proposals (RFP) on March 30, 1990.

The Chairman of the House Committee on Appropriations, Subcommittee on Interior and Related Agencies, requested an assessment of the feasibility study, cost/benefit analysis, functional requirement analysis, and other documents related to the planned GIS. In March 1990, GAO issued a Draft Report in which they recommended further studies be done before proceeding with the procurement. The Department of Agriculture and Forest Service specialists do not agree with the GAO assessment.

The additional studies would cost the Government more than $1 million. GAO's recommended changes to the feasibility and benefit/cost studies will make the economic benefits of purchasing and implementing this technology more advantageous than the very conservative estimate already developed. In addition, the additional studies will not yield further information that would be useful to the vendor community in preparing offers. The General Accounting Office's recommendations do not help the Government realize the benefits that GIS technology has to offer.

The Forest Service is ready to proceed with the acquisition and implementation of this beneficial technology. We are awaiting congressional committee concurrence to release the RFP.

429. Question: Which forests have this capability? Which do not?

Answer: The Forest Service has acquired interim GIS capability in advance of the national procurement for 18 Forest Supervisor Offices and 19 Ranger Districts in the Pacific Northwest Region. These systems are limited and will be migrated to the new system. In addition, we are using other agencies and universities to do some of our work until we can put GIS in place. The need for GIS technology in these areas arose from specific management issues of substantial public interest, such as spotted owl habitat in the Pacific Northwest or timber supply in southeast Alaska. The use of GIS technology allowed the Forest Service to respond more quickly to these complex natural resource issues than previously-used methods.

	Number of Forests with GIS Capability		
Region	Minimal Capability	Underway	No GIS
1 - Northern	2	1	10
2 - Rocky Mountain	1	1	10
3 - Southwestern	1	1	9
4 - Intermountain	4	1	12
5 - Pacific Southwest	5	0	13
6 - Pacific Northwest	18	1	0
8 - Southern	2	0	14
9 - Eastern	1	0	13
10- Alaska	1	0	1

In addition, 19 of 89 Ranger District offices in Region 6 have a single workstation, such as a personal computer, with GIS software in place at this time.

The following Forest Supervisors' offices have minimal GIS capability:

Region 1
Flathead NF
Deerlodge NF

Region 2
Shoshone NF

Region 3
Apache-Sitgreaves NF

Region 4
Bridger-Teton NF
Boise NF
Targhee NF
Humboldt NF

Region 5
Six Rivers NF
Klamath NF
Shasta-Trinity NF
Stanislaus NF
Sequoia NF

Region 6
All Forest SO's except the Deschutes NF

Region 8
NF's in Florida
George Washington NF

Region 9
Nicolet NF

Region 10
Tongass NF

430. Question: How much longer will it be before GIS is fully installed and active throughout Region 6? Across the Nation?

Answer: The Forest Service will continue to provide Region 6 with limited GIS technology on a project-by-project basis to meet their critical needs. Once the national GIS contract is awarded, the Region's GIS capability can be quickly enhanced with technology best suited to address complex natural resource issues.

Nationally, we had planned to award the GIS contract in the third or fourth quarter of FY 1991. Implementation could then begin within the fourth quarter of FY 1991. Implementation would proceed on Forests with critical needs first. Full implementation on all units needing GIS capability would proceed over the eight year life of the contract.

We estimate that the minimum delay from not being able to release the RFP on time will place contract award in the first quarter of FY 1992. Fully redoing the feasibility and benefit/cost analyses could delay contract award until late FY 1992 or early FY 1993.

431. Question: What funding levels are required to complete acquisition of necessary GIS hardware and software and to fully integrate GIS into Forest Service management activities?

Answer: The procurement of the national GIS capability would require an investment of $157.3 million for software and hardware, over the eight years of the proposed contract. The proposed funding level for FY 1991 is $10.7 million, with the remainder spread over the life of the contract.

Beyond acquiring software and hardware, the Service needs to undertake other activities to fully integrate GIS as a tool in our day-to-day management activities. Effective use of GIS requires a workforce skilled in its use. This will require an extensive training effort to develop and maintain the necessary skills.

Accurate and consistent resource inventory data is key to GIS use. Hence, the Service expects to invest $52 million, from both contract and in-house costs, in the preparation and enhancement of resource data over the next eight years. GIS technology makes the sharing of data within the agency and with other agencies much more feasible than do current methods of managing data. We believe the data standards we have developed over the last several years will facilitate sharing and reduce data collection costs for all agencies involved.

LAND MANAGEMENT PLANNING

432. Question: Please provide us with an update on Region 6 land and resource management planning efforts. How many plans are now in final form? When do you expect to complete all 19 plans?

Answer: As of April 30, 1990, seven forest plans were published in final and included the Colville, Siskiyou, Fremont, Ochoco, Okanogan, Wenatchee, and Siuslaw. The remaining forest plans will be completed by the end of this year. There are 13 forests in Region 6 which will be impacted by the spotted owl decisions. The Region is continuing completion of forest plans and will make any necessary adjustments because of the owl by amending the plans.

433. Question: What difficulties do you expect to face in implementing these new obstacles, what do you suggest to remedy the problem to assure final plan implementation?

Answer: The major difficulties associated with expected changes in requirements with regard to spotted owl and old growth are:

(a) We would discontinue many timber sales in various stages of preparation and new sale proposals would be added. Since the planning cycle from project identification through award and implementation takes two to five years or more depending on the site and resources involved, changes to the requirements would necessitate additional monies to prepare new sales and/or modify existing sales to accomplish program objectives. In the short term, investments are cancelled or deferred sales are lost resulting in overall unit cost increases.

(b) Many projects other than timber would experience the same need to re-do work. The dollar costs and time lost are generally less than for timber projects.

(c) Finding substitute sales becomes an ever-increasing problem.

(d) Monitoring and evaluation programs would be disrupted.

(e) Employee morale is affected. Some people are discouraged over the many changes in direction and many fear loss of their jobs.

Remedies to these problems fall into the following actions:

(a) Complete the forest plans to insure that standards and guidelines are established to provide assurance of resource protection.

(b) Move forward rapidly in two areas: (1) information management, specifically Geographic Information Systems, but also information management in general; (2) public involvement in project development and monitoring, and public education of the implementation and meaning of Forest plans.

434. Question: What level of funding will be required to implement the final forest plans?

Answer: Full implementation funding of forest plans is displayed below in comparison to the FY 1991 President's Budget.

	FY 1991 Forest Plan	FY 1991 R-6 Allocation
	(millions of dollars)	
Total Appropriated Funds	$462.3	$336.6
Total Regular Forest Service (includes trust funds)	$630.0	$514.4

The numbers cited above relate to FY 1991 only. The average annual funding needed to implement the forest plans in Region 6 over a decade would be $513.7 in appropriated funds and $705.9 in total regular Forest Service funds which also includes trust funds.

TIMBER SALE PROGRAM -R6

435. Question: Please provide the Subcommittee with an update on the timber sale pipeline in Region 6.

Answer: At this time, Region 6 has 528 million board feet in the pipeline.

436. Question: What percentage of the FY 1991 timber sale program for Region 6 will be prepared by October 1, 1990?

Answer: The target is 2.3 billion board feet at gate 3 or 40% of the program completed by the end of FY 1990.

437. Question: Please explain why a greater percentage will not be ready for sale at the beginning of FY 1991 when the Appropriations Committees provided specific timber sale pipeline funding in FY 1990.

Answer: Congress provided additional funding in the final FY 1990 of $15 million in appropriated funds and $30 million in salvage sale funds and directed that these funds be used to restore the pipeline to 100% of our 5 year average timber sale offer quantity as quickly as possible. This is a total of $45 million in FY 1990.

About 50% of the Excess Timber Receipts funds ($29 million) provided in FY 1989, were obligated and used primarily to prepare sales thru the early phases of the pipeline process (Inventory and NEPA decision), therefore, accomplishments have not been reported to date.

Progress to accelerate refilling the pipeline has been made difficult by continued appeals and litigation. In FY 1989, we made little progress as we continued to revisit previously prepared timber sales to incorporate new decisions and information into the design of the timber sale. Changes have been made for (a) Grizzly bear, Spotted owl, and Red Cockaded woodpecker habitat classification and coordination; and

(b) decisions which redefine standards and guidelines; and (c) mitigation of cumulative adverse effects caused by accelerated harvest on private land created by shortages in timber supply and a strong market.

I am currently considering various courses of action to maintain a stable timber supply in Region 6 if the spotted owl is listed as a threatened or endangered species by the U.S. Fish and Wildlife Service on June 23.

438. Question: What good will any action we might take be if there are no timber sales prepared for FY 1991?

Answer: There would be little or no effect on the FY 1991 program. If we do not have pipeline volume available we would not be able to respond to any new initiatives. The tremendous demands of completing Section 318 of the FY 1990 Interior Appropriations Act and the possible impacts of the Interagency Spotted Owl Committee's Habitat Conservation Areas leave considerable doubt that we will have significant usable pipeline volume available as we enter FY 1991.

439. Question: How long does it take to prepare an average timber sale?

Answer: Under normal conditions, it requires three to five years.

440. Question: Do you have suggestions as to how to shorten the length of time it takes to prepare timber sales without affecting the quality of the environmental assessment for the sale?

Answer: Other than increasing the present workforce and expanding the use of contracting opportunities in timber sale preparation, there does not appear to be any way to greatly reduce the required preparation cycle.

441. Question: What is your strategy for accomplishing your FY 1990 timber sale program in Region 6?

Answer: The forests are working at maximum capacity attempting to complete Section 318 of the FY 1990 Interior Appropriations Act volume. We have approached Section 318 similar to a project fire and elevated it to a high priority equal to completing forest plans. In order to meet the specified volume, no timber sale preparation personnel will be assigned to firefighting duty until all other firefighting resources are exhausted.

442. Question: How much of the FY 1989-1990 program covered under Section 318 remains to be offered?

Answer: As of April 20, 1990, 3.7 billion board feet remains to be offered.

443. Question: Can you complete the program in the remaining 5 months of the two year period?

Answer: Yes, however, there is some concern with the effects of the Interagency Spotted Owl Committee's recommendations. The effects of the Habitat Conservation Areas on the sale program has not yet been determined. We will continue to keep the Committee informed as new information develops.

444. Question: Will we need to incorporate language in the 1991 Appropriations Bill to allow you to complete the sale of the 1989-1990 timber sale program?

Answer: Existing legislation appears to be adequate to allow completion of the sale program for 1989-1990.

445. Question: Does your FY 1991 budget request contain enough funds to accomplish presale planning for the timber program in the out-years?

Answer: The FY 1991 President's Budget request will allow preparation of 8.5 BBF for out-year timber sales nationally.

446. Question: Over what period of time and with what funding level will it be possible to restore the Region 6 timber sale pipeline?

Answer: We estimate it would take three years at about $21 million per year over the current, regular program.

447. Question: How well do you think Section 318 has worked? Do you believe that it has been successful?

Answer: We feel the effort has been successful, but it has not been without some problems. Some advisory board members have resigned. Scheduling sales has been difficult and it has taken longer to review and obtain approval than had originally been estimated. Section 318 attempted to solve all problems in one amendment and as a result often set up conditions that were difficult, if not impossible, to accomplish.

448. Question: Have you been able to minimize the fragmentation of significant stands of old growth forest as was envisioned when we wrote Section 318?

Answer: Fragmentation was one of the aspects of Section 318 that produced conflicts with the basic premise of producing 7.7 BBF in the two-year period. On some forests fragmentation was reduced somewhat, but on others there was little or no opportunity to reduce fragmentation without jeopardizing the volume attainment required under Section 318. But fragmentation has been minimized to the extent possible.

449. Question: Have the timber sale advisory boards functioned as we originally intended?

Answer: Generally, we believe that the advisory boards functioned as intended.

450. Question: How many timber sales were modified by the timber sale advisory boards in Region 6? How many timber sales were rejected by the boards? How many advisory boards were unable to approve enough timber sales to meet the forests' volume targets?

Answer: Eight of the 13 advisory boards have not completed their reviews. Eighty percent of the FY 1990 volume has been presented to the advisory boards and recommendations have been made on 70% of the program. Of the sales returned by the advisory boards, 74% are recommended for sale as presented, 24% are recommended for modification, and two percent are recommended to be dropped. The reworking of the 24% of completed sales returned from the board diverts effort from the preparation of FY 1991 sales and reduces pipeline volume. The Region is exploring various alternatives to fully implement all of the provisions of Section 318.

451. Question: How many timber sales offered in conjunction with Section 318 have been appealed? What is their current status? How many have been litigated? What is their current status.

Answer: The 65 sales scheduled to be offered in 1990, under Section 318, have a total of 81 appeals. Decisions have been rendered on 30 of these sales, while 35 sales have 53 active appeals pending. These figures include sales under appeal on or after October 1, 1989, and do not include sales planned for 1990, that were appealed in prior fiscal years.

	NUMBER OF SALES	APPEALS	VOLUME MBF
Final	30	28	189.4
Pending	35	53	253.8
TOTAL	65	81	443.2

One sale, the Cowboy Sale on the Umpqua, has been litigated to date. The lawsuit is still pending.

Several other lawsuits have potential to impact the 1990 Sale Program. On April 2, 1990, a letter was received by the Regional Forester titled "Notice of Protest and Intent to Take Legal Action" on 214 timber sales in Oregon and Washington. No lawsuit has been officially filed. The lawsuit, Harbor Against Land Takeover v. U.S. Forest Service, addresses the application of the Spotted Owl SEIS to Grays Harbor Federal Sustained Yield Unit. In the lawsuit Seattle Audubon Society v. Robertson, the constitutionality of Section 318 of the FY 1990 Appropriation Act is under appeal. In addition, there is a challenge to the 9th Circuit Court decision to lift the injunction against timber harvest on Mapleton District, Siuslaw National Forest.

JACK WARD THOMAS REPORT

452. Question: Can you please provide me today with an assessment of the impacts of the Jack Ward Thomas Report if it were implemented in its current form? What are its economic and social impacts in terms of jobs (both direct and indirect), timber sale receipts, and timber volume reductions?

Answer: Timber harvest on Federal lands will decline by 2.4 billion board feet by 1995 and remain at that level under the Interagency Scientific Committee (ISC) recommendations.

Implementation of the estimated final plans for the Forest Service would result in a decline in employment of 6,247 jobs. Implementation of the ISC Recommendations would result in a further decline of 19,162 jobs. The total decline in employment for the three West Coast States is estimated to be 25,409 jobs compared with the estimated employment at the level associated with current plans. These employment estimates reflect declines in direct and indirect employment associated with timber harvest on those National Forests and BLM Districts affected by the ISC Recommendations. It does not include private and other public ownerships, nor does it include Forest Service and BLM lands not affected by the ISC Conservation Strategy.

In 1995, it is estimated that revenues from Forest Service lands would decline an estimated $28 million and decline $120 million from BLM lands. In the year 2000, the decline in revenues from Forest Service lands would be $99 million and $130 million from BLM lands.

These data are from the report "Economic Effects of Implementing a Conservation Strategy for the Northern Spotted Owl." For further information, please refer to the Report.

453. Question: If the Thomas Report is implemented, would you be able to maintain your historical volume distribution between Oregon and Washington? What state is hardest hit?

Answer: No, we would not be able to maintain the historical timber sale volume distribution between Oregon and Washington. Washington State would receive the greatest impact of full implementation of the Thomas Report.

454. Question: What greater economic impacts would result from implementation of the Thomas Plan if the existing wilderness areas, wild and scenic river areas, national scenic and recreation areas, and other amenity allocations in Oregon had not been designated previously?

Answer: The impacts would have been greater in terms of total volume reduction, since the ASQ would have been higher if wilderness and other designated areas had been included in the commercial timber sale base. However, we do not have adequate timber inventories in wilderness in order to calculate the difference.

455. Question: What are your current plans regarding the Thomas Report? Will you use it in its entirety when you rewrite your Record of Decision for your Final Supplemental Spotted Owl E.I.S.? Will you prepare a NEPA document prior to implementation of the Thomas Report? When will you make this decision?

Answer: We are complying with the provisions of Section 318 in reviewing and revising as appropriate the December 1988 Record of Decision. In so doing we are considering the recommendations from the Interagency Scientific Committee. Any revision of the ROD will comply with NEPA and NFMA provisions and will be completed by September 30, 1990. Due to the requirements of NFMA and NEPA we will not be able to make a final decision until September. The potential of listing by the Fish and Wildlife Service could change this schedule.

456. Question: Is there any doubt in your mind that your revised Record of Decision will be completed by September 30, 1990?

Answer: Our assessment is that we can complete it by September 30.

457. Question: If the spotted owl is listed as a threatened or endangered species by the U.S. Fish and Wildlife Service on June 23, what do you expect to immediately happen to your timber sale program?

Answer: We expect an impact on the FY 1991 sale pipeline and on the ASQ if the owl is listed. Generally in previous listing cases the requirements for recovery take some time to develop and the FY 1990 program is mostly protected by Section 318 of the FY 1990 Interior Appropriations Act.

458. Question: Will you have the opportunity to work with the Fish and Wildlife Service on formulating a Recovery Plan for the owl should it be listed on June 23?

Answer: In August of 1988, the Forest Service entered into a Cooperative Agreement with the National Park Service, Bureau of Land Management, and the U.S. Fish and Wildlife Service. This agreement has set the tone for cooperation between the agencies since then. This agreement will furnish broad cooperation guidelines in the event the Fish and Wildlife Service finds listing is warranted. We anticipate the Fish and Wildlife Service will provide the opportunity for Forest Service participation on any Recovery Plan involving National Forest System Lands.

459. Question: It is my understanding that your activities in the "category one" Habitat Conservation Areas in the Thomas Report have been curtailed to some extent. Can you please explain to what degree this is affecting the FY 1990 timber sale program, and under what authority have you taken this action?

Answer: Upon receipt of the ISC report, Regional Foresters in Regions 5 and 6, under timber sale authority delegated by the Chief, held up award of new sales in Habitat Conservation Areas (HCA's) in order to evaluate them in light of the proposed guidelines. Sales that are not within 1/2 mile of owl activity centers have since been released for award. Sales that are within 1/2 mile of owl pairs are being held up while we evaluate options to accomplish the provisions of Section 318 and maintain the future capability of implementing the ISC (Thomas) report. Presently about 150 million board feet in Region 6 and 69 million board feet in Region 5 are in this category. We will not know the final impact on the FY 1990 program until this analysis is completed.

460. Question: I have a copy of a memorandum from the Regional Forester to the Forest Supervisors in Region 6 that is dated April 12, 1990. The memorandum instructs the supervisors to ". . . immediately, withhold award any additional FY '90 timber sales located within the HCAs. . .". Was the Washington Office informed of such a decision by the Regional Forester before the memorandum was sent?

Answer: We were unaware of this memorandum before it was sent out. The memorandum holds up awarding sales until they are evaluated. Some of these sales have since been released for award. The sales currently being evaluated are those in habitat conservation areas within 1/2 mile of nesting pairs and those requested by the Fish and Wildlife Service as part of their conferencing process. Decisions will be made on a case-by-case basis based on criteria established by the Fish and Wildlife Service for conferencing and by the two Regions in order to maintain future options.

461. Question: On what basis do you assume the Thomas Plan will (or should) be adopted virtually as is? Is the Forest Service considering other management alternatives or adjustments to the Thomas Plan which would assure the owl will not become extinct and which would still allow the Forest Service to meet its statutory multiple-use management mandate?

Answer: We have not made assumptions about the decision at this time. However, we are reviewing our 1988 decision on spotted owls in accordance with requirements in Section 318 which requires consideration of the ISC (Thomas) report.

462. Question: Will the Thomas Report prevent you from meeting your FY 1989-1990 timber sale targets?

Answer: We are still evaluating this. We are in the process of developing interim guidelines for FY 1990 sales in habitat conservation areas in order to maintain future options.

463. Question: How are you integrating the Thomas Report into your FY 1990 timber sale program?

Answer: No decision has been made to implement the guidelines contained in the Thomas Report. Interim guidelines designed to preserve options to implement the Thomas Report have been developed. Regional Foresters in Regions 5 and 6 have implemented these interim guidelines.

464. Question: What do you plan to do with existing final forest plans in light of the Thomas Report?

Answer: We will continue to implement Forest Plans until a decision is made concerning the ISC (Thomas) report. The plans will be reviewed and amended, if necessary, at that time.

465. Question: Will you simply amend the plans, or will you revise the plan? (under a revision, and possibly under a major amendment, the wilderness allocation would have to be revisited.)

Answer: A decision on whether individual plans will be amended or revised cannot be made until a decision on the conservation strategy is made. If the owl is listed it could make major changes in how we proceed.

466. Question: Do you intend to offset some of the land withdrawals proposed by the Scientific Committee with other land allocation changes in the Forest Plans in order to maintain the timber sale level in Region 6?

Answer: Land allocation changes will be considered when individual forest plans are amended.

467. Question: You have created a task force to manage endangered species on the national forest system. How do you plan to fund this program and what effect will it have on the other resources you are managing?

Answer: A Threatened, Endangered, and Sensitive Species (TES) Task Force led by the Regional Forester for Region 3 was established in May of 1989. The Task Force team was charged with developing a goal-oriented program to strengthen TES management in the Forest Service. The Task Force job is completed. The Chief of the Forest Service has approved its recommendations and the Task Force has been disbanded. Implementation of these recommendations are expected to begin this year at the Regional level. The 1990 RPA program reflects the budget emphasis that will be needed to accelerate recovery of TES species. By recovering TES species and preventing other species from being listed through these proactive efforts, other resource management activities would occur in a more orderly fashion.

468. Question: Is the Forest Service considering attempting to test alternative silvicultural techniques within the proposed HCAs? If so, what kind? If this is not possible, why not?

Answer: The Interagency Scientific Committee recommended that logging and other silvicultural activities (with the exception of stand regeneration) should cease within the HCAs. The Committee recommended that testing of alternative silvicultural techniques should occur only outside of the HCAs because of the uncertainty of their effects on owl habitat suitability. Presently, the agencies involved are reviewing these recommendations.

469. Question: Considering current circumstances, what is an achievable ASQ level for Region 6?

Answer: The current draft and final plans' ASQ level for Region 6 is 4.0 BBF. However, we know that the final Forest Plans, the review of our 1988 Record of Decision required by Section 318, and the potential "listing" of the owl can effect the ASQ. The early estimate of impacts from implementation of the ISC Report for Oregon, Washington, and northern California was 1 - 1.3 BBF. We plan to have more precise figures on potential impacts in the near future. However, until a decision on whether to implement the ISC Report recommendations is made, a listing decision is made, and Forest capability is reviewed in light of these decisions, we will not be able to answer this question for the long-term.

470. Question: Please update the Subcommittee on the conferencing process with the U.S. Fish and Wildlife Service. Also, please describe the degree of coordination between the four major resource agencies with regard to old growth forest information gathering and research efforts, and efforts regarding management of the spotted owl.

Answer: The U.S. Fish and Wildlife Service (FWS) has completed its overview analysis of the potential effects of the Region 6 Section 318 timber sales on the northern spotted owl. On March 30, 1990, the Fish and Wildlife Service provided an informal conference report that provides advisory recommendations for reducing or minimizing the potential effects of timber sales on spotted owls. Forests have been asked to substitute sales where possible or to modify sales to reduce the level of impact. Sales with the most significant potential impact that cannot be modified are not being awarded pending further review.

Interim criteria for the FY 1990 sale program were agreed to in conference with the FWS on October 23, 1989. Approximately 110 MMBF, or 62 percent of the affected volume on four northern California Forests has been conferenced to date. Using this approach, a Biological Evaluation (BE) is prepared for each sale using the interim criteria to prevent a situation that would imperil the owl. The FWS then, is asked to review and concur with the BE. The Conference criteria consist of increased acreage for Spotted Owl Habitat Areas (SOHA), maintaining Areas of Concern, and holding Interim Management Areas that serve to supplement the SOHA system.

COORDINATION BETWEEN THE FOUR MAJOR RESOURCE AGENCIES: Coordination between these agencies was formalized in an Interagency Agreement signed in August 1988. Coordination in management activities affecting the Northern spotted owl has been further strengthened by a Memorandum of Agreement at a meeting in Portland, Oregon on April 13,1990. This Agreement has been signed at the Regional and State levels by The Fish and Wildlife Service, National Park Service, Bureau of Land Management, Forest Service (Pacific Northwest Region, Pacific Southwest Region and Pacific Northwest Research Station), California Resources Agency, Oregon Department of Fish and Wildlife and the Washington Department of Wildlife.

OLD-GROWTH INFORMATION GATHERING: There is no consistency of data collection between the agencies. However, coordination between the four major resource agencies provides more information about the data collection being done by each agency.

Pacific Southwest Region (California): Region 5 has coordinated with Region 6 and the California Department of Forestry to develop a resource inventory which will provide old growth information for four National Forests in the Klamath Province. By October 1, 1990, an updated map of old-growth on National Forests located in the California portion of the Klamath Province will be available. The data collection contract will be awarded by June of 1990 with analysis completed by mid 1991.

Pacific Northwest Region (Oregon and Washington): Preliminary maps of the potential old growth vegetative conditions for National Forests west of the Cascade summit are expected to be completed by June 1, 1990. Final hard copy and Geographic Information System(GIS) compatible maps will be completed by October 1, 1990.

QUESTIONS SUBMITTED BY SENATOR DANIEL K. INOUYE

GLOBAL CHANGE RESEARCH

471. Question: The Committee on Earth Sciences of the Federal Coordinating Council for Science, Engineering, and Technology has promulgated a strategy for global change research. One objective of this strategy is to develop integrated conceptual and predictive earth system models. What plans does the Forest Service have to initiate this type of predictive research and how do you plan to integrate the established tropical networks such a MauiNet in the USAID funded project "International Benchmark Sites Network for Agricultural Technology Transfer" (IBSNAT)?

Answer: The Forest Service Global Change Program is fully integrated in, and consistent with, the Committee on Earth Sciences (CES) strategy and program plan. As such, we will feature "Understanding," "Monitoring," and "Modeling" as pillars of our program. We have initiated a National Forest Health Monitoring program which provides national coverage, including Hawaii and the Pacific Islands, for forests and related ecosystems over the next few years. This monitoring activity is being developed in cooperation with the State Foresters and the U.S. Environmental Protection Agency. We plan to continue the cooperation on MauiNet that has been started with our Forest Service Pacific Southwest Research Station. Other interested cooperators are encouraged to contact us.

Modeling will be pursued with particular emphasis on understanding ecosystem processes, assessing the impacts of global change on them, and predicting the likely results. We, and other USDA Agencies, will be developing a planned Terrestrial Ecosystems Assessment Model (TEAM) program during the upcoming year. TEAM will seek to incorporate existing models in a distributive modeling approach to provide an integrated model assessment of the impacts of global change on all terrestrial based ecosystems. Again, we encourage potential cooperators to contact us.

Our increasing involvement in tropical forestry, for global change and other interests, along with our well established cooperative efforts with the U.S. Agency for International Development in forestry, would indicate that the specific projects referenced in your question would be high on our list for cooperative action, assuming that our global change program moves forward as we propose.

PACIFIC ISLANDS FORESTRY PROGRAM

472. Question: The President's budget has called for a reduction in the budget of the Pacific Islands Forestry Program that serves Hawaii and the American Pacific. Please explain the justification for these reductions and specifically indicate the fate of those research activities started with FY90 fund appropriated by Congress.

Answer: The President's budget proposes $2.173 million for tropical forestry research in FY 1991. This is consistent with previous President's Budgets: FY 1989 was $2.168 million proposed and FY 1990 proposed $2.153 million. In FY 1990, Congress added $1.465 million for tropical forestry research above the President's Budget.

Funding in FY 1991 at the proposed level compared to FY 1990 will result in the following impacts:

--Termination of research work unit PSW-4104 (Honolulu, HI) will reduce research on agroforestry, species trials for watershed protection, and mangrove regeneration in the western Pacific Islands.

--In PSW-4151 (Honolulu, HI) research on restorative ecology and biological control of noxious weeds will be reduced.

--In SO-4151 (Rio Piedras, PR) research will be reduced on developing ecological and economic information needed to rehabilitate unproductive, cutover forests in both continental and island environments; sustained-use management of tropical forests in continental environments will be stretched out; long-term plantation research in Puerto Rico will be postponed; and work on expanding tourism and forest-based recreation in tropical forest ecosystems will be terminated.

--In FPL-4721 (Madison, WI) research will be reduced on primary processing of tropical species into structural products.

RURAL ECONOMIC DEVELOPMENT

473. Question: The President has issued an initiative entitled "Rural Economic Development for the 1990's, A Presidential Initiative." What are the Forest Service plans to conduct the necessary research and technology transfer to assist in the revitalization of forest based rural communities in Hawaii and the American Pacific?

Answer: We currently are not conducting focused rural development research or technology transfer to revitalize forest-based rural economies in Hawaii. However, we are developing a National Rural Development Strategic Plan which will encourage more active rural development efforts nationwide, including Hawaii and the Asian Pacific. The Forest Service also works with State Foresters and others concerned about rural development to accomplish the goals of this plan.

TROPICAL FORESTRY

The loss of tropical forests throughout the world is of major concern to all nations because of adverse impacts on world climate, forest products, indigenous plan and animal species, and the general prosperity of many countries. Yet, there seems to be limited concern over tropical forests within the jurisdiction of the United States--especially in Hawaii and the American Pacific. At the same time, there is considerable expertise in tropical forestry in the State of Hawaii's Department of Land and Natural Resources, the University of Hawaii, the governments and institutions in the American Pacific, and the Forest Service's Institute of Pacific Islands Forestry.

474. Question: Would you please comment on how these many and valued resources can be pulled together into a coordinated program to address the critical tropical forestry issues in Hawaii and the American Pacific? Specifically, how feasible would it be to establish a programmatic center that would pool the existing expertise in the region and solve the high priority tropical forestry problems in Hawaii and the American Pacific?

Answer: Efforts are already underway to strengthen and better coordinate activities of Federal, State, university, and other institutions concerned with forestry in Hawaii and the American Pacific. We expect to continue these efforts.

Representatives of the five land grant colleges of the American Pacific, the East-West Center, the Hawaii Division of Forestry and Wildlife, and the USDA Forest Service collaborated in preparing a report issued in July 1989, "Tropical Forestry Research, Education, and Extension Needs in the American Pacific." This report identifies priority needs, recommends actions, estimates budget costs, and identifies potential sources of funds for a coordinated program in the context of overall agricultural development. Existing and planned Forest Service research and extension activities at the Institute of Pacific Islands Forestry (IPIF) would be an integral part of that effort.

The Programmatic Center could improve cooperation, efficiency and synergies among the various partners involved, and could increase the amount and quality of tropical forestry work needed to solve problems and develop opportunities.

QUESTIONS SUBMITTED BY SENATOR J. BENNETT JOHNSTON

SOUTHERN FOREST PRODUCTIVITY PROGRAM

In a recent report entitled The South's Fourth Forest, the Forest Service characterized the 182 million acres of timberland in the 13 southern states as one of our nation's greatest assets. This report also identified the growing and competing demands being placed on our southern forests for timber supply, recreation, wildlife habitat and other important uses. In cooperation with universities and forestry schools in the South, the Forest Service developed a blueprint for a priority research program to address the concerns outlined in the report.

This priority research program, the Southern Forest Productivity Program, is now underway at the Forest Service. I understand, however, that the program has not yet been fully implemented. Nor has a competitive, extramural research program been initiated as originally planned by the Forest Service and the southern universities.

475. Question: When does the Forest Service intend to implement, as originally indicated, a competitive research program as part of the Southern Forest Productivity program within which the southern universities can participate?

Answer: The FY 1991 Budget does not propose funding for the competitive research program. We cannot speculate on when or if such funding might be requested.

476. Question: What size competitive program does the Forest Service envision at current funding levels for Forest Service research?

Answer: The current level of funding for Forest Service Research does not allow establishment of a competitive extramural research program.

477. Question: Is additional research funding needed for the Forest Service to fully implement the extramural programs of the Southern Forest Productivity Program? If so, how much?

Answer: The Southern Forest Productivity Program heretofore has been funded almost entirely by shifting emphasis within the base funding of existing Forest Service units. Last year, in reply to an inquiry from Senator Cochran, we reported that, to fully implement the accelerated research program developed jointly by the Forest Service and universities, would require an additional $10 million for cooperative and competitive research. This would allow establishment of an overall program manager, a peer review process, and competitive awards. A competitive grant program could be established at lower levels of additional funding, such as $2.5 million but would not fully implement the Program.

QUESTIONS SUBMITTED BY SENATOR PATRICK J. LEAHY

AMERICA THE BEAUTIFUL

I am pleased with the Administration's increased commitment to tree planting and community forestry through its "America the Beautiful" initiative. These state and private oriented programs may go far in encouraging management of our non-industrial private forest lands. I am concerned, however, by a proposed 41% decrease for the Forest Service's State and Private Forestry budget. Though "America the Beautiful" is expected to supplement this decrease, there are many regions of the country where multiple-use forest management assistance on existing forest lands, not tree planting, is needed. A Forestry Title to expand state and private forestry programs within the Cooperative Forestry Assistance Act will be included in the 1990 farm bill.

478. Question: Will the $175 million available for tree planting under the Cooperative Forestry Assistance Act be made available for management of existing forest lands?

Answer: In addition to tree planting, America the Beautiful provides for a strengthened emphasis on working with non-industrial private forest landowners to assist them in improving and maintaining their existing forest cover. Many owners are not aware of the management activities needed to keep trees vigorous, and to protect existing forests from susceptibility to insects and diseases and the buildup of fuels.

Assistance will be provided to landowners in line with their objectives to improve existing forests through thinning, additional planting, brush clearing or other practices deemed appropriate for the site. Because of the large amount of existing forest cover in the Eastern U.S., a major portion of the America the Beautiful's improvement efforts will be concentrated there.

479. Question: If not, how will technical and financial forestry assistance be delivered to owners of existing forest lands?

Answer: Technical and financial forestry assistance for timber stand improvement will be handled using the existing Federal/State delivery system which is now in place for current USDA forestry cost-share programs.

BELOW-COST TIMBER SALES TEST

I commend the Administration for its below-cost timber sale initiative. It is time to recognize economic efficiency in the timber sale program. However, I am concerned that strict interpretation of economic efficiency tests may lead to management decisions regarding non-commodity resources where financial benefits do not accrue.

480. Question: What was your rationale for choosing those national forests to be included in the below-cost timber sales pilot program?

Answer: Criteria cited in the President's Budget Summary include:
- In reasonable proximity to population centers.
- Have experienced rapidly increasing demand for recreation.
- Strong ability to support economic activity other than logging e.g., the communities in which they are located are not entirely dependent on timber and have the ability to diversify.

481. Question: In your search for economic efficiency, do you plan to apply the same benefit/cost criteria to non-commodity resources as you do to commodity resources?

Answer: No, that is not the Forest Services' intent. We believe a range of services facilitating public use of the national forests should be provided without attempting to fully recover the costs.

NON-COMMODITY PROGRAMS

I am encouraged by non-commodity program funding increases. Unfortunately, there is still great disparity between timber programs and non-timber programs. The timber programs are funded at 92% to 103% of aggregate forest plan levels while non-KV funded fish and wildlife programs are funded at 25% to 41%, reforestation and timber stand improvement programs are funded at 46% to 73%, soil, water, and air programs are funded at 38% and land acquisition is funded at 41%. We must fully fund non-commodity programs. If we are to limit spending, cuts should be equally made across all program areas.

482. Question: Why is there such variability between the timber program and other forest management programs?

Answer: We are somewhat confused as to how your percentages were derived. Our analysis of the FY 1991 President's Budget as a percentage of forest plans does not match your percentages. Assuming that your question refers to Region 9 only, the following ranges apply: the timber programs range from 50% of the forest plan on the Wayne-Hoosier to 107% on the Hiawatha; the wildlife and fish programs range from 49% on the Wayne-Hoosier and White Mountain to 83% on the Nicolet; reforestation and timber stand improvement range from 70% on the Green Mountain to 109% on the Chippewa; and the soil, water, and air programs range from 72% of the Ottawa plan to 94% on the Green Mountain. Overall in Region 9, FY 1991 funding of the forest plans is 87% in timber, 59% in wildlife and fish, 91% in reforestation and timber stand improvement, and 84% in soil, water, and air.

Service-wide funding percentages of all forest plans for FY 1991 are as follows: timber, 88%; wildlife and fish, 60%; reforestation and timber stand improvement, 70%; and soil, water, and air, 80%.

Forest Supervisors' budget requests are the driving force behind the allocations for each program. Their requests represent the strategies for forest plan implementation over the decade. For example, if an individual national forest's recreation program funding has lagged in the early part of the plan period, the Supervisor may elect to request much more money in that program and reduce the request for other program funding. When the final allocation is received, recreation's percent of the plan will increase and other programs will fall.

When final allocations are made to the Regions and Forests, they are also adjusted to maintain the integrity of the direction in the Appropriation and committee report language. This can also cause apparent disparities.

RESEARCH

The Administration's apparent funding of priority research programs at the expense of basic research is disturbing. Although priority research programs address some of the most critical natural resource problems we face today, our ability to respond quickly to these priorities is based on years of basic research. It appears that basic research is slated for a $12 million reduction.

483. Question: Is this reduction a part of a downward trend, or a one-year diversion?

Answer: The erosion in foundation research program funding has been underway since FY 1989. In FY 1989, foundation research constituted 72 percent of total funding and in FY 1990, 67 percent. The President's Budget proposes spending 58 percent of total funding on foundation research. The foundation research program includes more than basic research, although basic research is an important component. The foundation includes maintaining a cadre of expertise in a variety of areas so that we can quickly deal with unexpected problems which emerge.

484. Question: What impact will this reduction have on the Forest Service's short- and long-term research abilities?

Answer: Major short-term impacts include:

-- 18 research work units will be eliminated; 11 through merger with other units and 7 terminated outright.
-- Five locations are proposed for closure: Orono, ME; Amherst, MA; University Park, PA; Berea, KY; and Bozeman, MT.
-- Approximately 120 scientists, technicians, and support staff will be subjected to RIF.
-- Between 70 and 80 people will be reassigned to new work in support of the priority research programs.

-- 90 new jobs will be created for work on priority research programs.

-- Major programmatic impacts, including an 18 percent reduction in insect and disease research, a 5 percent decline in forest inventory work, and a 40 percent reduction in tropical forestry research compared to FY 1990 appropriation levels.

There are three negative long-term impacts: the breadth of scientific expertise in the agency will be reduced; more equipment will become obsolete; and there will be gaps in long-term data.

TIMBER HARVEST LEVELS

485. Question: The Forest Service's ability to sustain harvest levels over time is being seriously questioned. Though harvest levels may exceed the sustained yield in a given year, harvest levels should be sustainable over time. Please supply me with sustained yield, timber offer, timber sale, and timber harvest levels for the last 20 years. These figures should be broken down into national, regional, and forest levels.

Answer: The volume levels requested are on the following pages. We are only able to provide the information for 10 years.

TIMBER OFFERED, SOLD, AND HARVESTED BY REGION
AND BY FOREST, FY 1980-1989
VOLUME IN MMBF

R-1 FOREST	1980			1981			1982			1983		
	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
BEAVERHEAD	23.7	36.4	16.0	29.4	37.1	23.5	26.3	20.1	6.9	30.2	28.0	23.1
BITTERROOT	43.2	42.8	32.3	32.9	27.9	45.8	35.5	31.0	12.4	28.7	27.0	31.7
PANHANDLE	317.7	317.2	236.7	273.7	277.0	235.3	271.8	249.6	145.0	295.0	262.1	251.7
CLEARWATER	156.4	153.3	112.1	157.1	141.0	170.0	157.0	100.8	88.1	154.9	149.1	157.8
CUSTER	2.2	1.7	1.1	2.1	0.7	1.4	3.2	3.5	1.0	4.1	4.0	4.5
DEERLODGE	20.3	10.7	25.7	18.8	14.7	19.5	10.2	11.3	8.9	22.9	24.5	27.8
FLATHEAD	120.2	104.3	92.9	118.3	46.7	100.4	125.9	148.7	54.4	112.8	132.6	83.1
GALLATIN	35.1	23.6	10.8	30.2	32.4	8.7	28.5	24.4	12.9	32.9	34.7	44.8
HELENA	18.2	21.9	6.9	18.0	11.9	8.0	17.2	18.4	15.6	17.0	17.0	13.2
KOOTENAI	214.0	175.8	155.9	244.6	264.3	162.2	321.2	221.3	131.5	216.7	245.0	182.6
LEWIS & CLARK	13.6	12.4	7.3	12.7	11.6	3.7	10.2	5.7	5.3	21.2	24.1	[illegible]
LOLO	110.0	80.7	70.0	100.5	80.8	87.4	99.2	35.7	40.2	73.2	100.4	[illegible]
NEZPERCE	106.7	102.3	65.9	104.8	53.4	86.0	95.0	98.6	23.3	70.2	82.1	43.7
TOTAL	1,192.3	1,133.1	835.6	1,145.0	994.5	955.0	1,137.2	973.1	589.5	1,079.8	1,125.1	947.6

R-1 FOREST	1984			1985			1986			1987		
	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
BEAVERHEAD	25.5	21.7	35.7	23.7	26.3	30.8	22.5	28.5	41.9	20.7	11.4	34.7
BITTERROOT	31.9	26.2	30.1	32.6	39.4	46.6	34.3	26.3	36.7	30.8	19.6	35.3
PANHANDLE	275.2	261.9	228.9	262.2	181.3	240.0	262.8	204.2	244.8	250.7	237.1	226.6
CLEARWATER	165.9	117.6	146.8	160.7	146.7	89.1	140.7	110.8	121.7	138.1	134.7	142.3
CUSTER	6.1	5.8	4.4	4.2	7.0	2.8	4.1	8.0	5.9	3.4	5.8	8.0
DEERLODGE	19.1	25.6	16.9	19.0	21.7	16.1	18.8	21.5	16.6	18.0	10.7	15.6
FLATHEAD	130.0	83.3	116.6	106.6	91.7	80.1	134.8	87.2	116.5	99.8	81.0	119.9
GALLATIN	21.0	26.1	33.2	20.1	26.8	26.8	19.4	20.6	23.2	19.0	15.4	28.1
HELENA	21.1	12.9	9.5	20.0	19.2	50.5	17.8	13.9	38.4	16.0	20.6	34.0
KOOTENAI	223.2	212.4	197.8	215.8	224.3	180.2	241.9	227.6	204.1	239.8	264.2	248.4
LEWIS & CLARK	13.2	20.8	19.5	13.3	18.8	13.3	14.7	18.7	14.8	11.7	11.5	20.3
LOLO	95.5	44.7	73.3	80.6	66.6	48.0	73.2	58.2	62.3	75.7	77.5	79.8
NEZPERCE	100.8	58.3	56.0	89.6	66.2	112.9	91.2	90.5	96.1	100.4	92.8	69.1
TOTAL	1,126.5	917.1	968.5	1,048.4	938.0	944.4	1,044.0	915.0	1,024.8	1024.1	901.9	[illegible]

R-1 FOREST	1988			1989		
	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
BEAVERHEAD	4.4	7.8	22.2	6.1	9.6	8.3
BITTERROOT	15.7	18.4	25.7	25.1	19.6	25.5
PANHANDLE	258.0	261.9	252.8	229.3	250.8	263.1
CLEARWATER	137.5	119.9	89.0	146.6	148.1	120.4
CUSTER	5.6	6.9	3.8	33.6	12.5	13.0
DEERLODGE	19.8	21.5	25.3	23.1	29.5	33.8
FLATHEAD	70.0	71.8	122.0	35.9	38.9	91.7
GALLATIN	5.2	5.5	17.5	13.8	14.4	19.8
HELENA	14.3	17.3	11.4	15.0	13.4	17.6
KOOTENAI	232.2	178.9	248.1	168.3	197.4	224.5
LEWIS & CLARK	16.0	13.0	13.5	9.7	10.1	14.9
LOLO	86.3	77.9	63.6	102.3	105.5	92.1
NEZPERCE	104.6	112.2	72.9	105.0	77.6	99.5
TOTAL	987.6	913.0	977.8	913.8	922.6	1024.3

R-2 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
ARAPAHO/ROOS.	23.9	27.9	13.1	20.0	27.2	22.5	21.5	10.7	22.0	26.9	40.0	29.0
BIGHORN	13.5	11.2	14.6	13.4	16.2	10.1	12.0	0.0	0.0	22.9	22.9	11.9
BLACK HILLS	140.9	124.4	91.0	150.4	168.0	89.9	113.6	103.6	84.7	104.7	73.9	129.1
GRND ME-UN/GUN	29.2	19.2	15.0	27.1	21.6	27.0	34.4	33.5	12.3	29.70	22.7	17.9
MEDICINE BOW	35.8	33.4	22.1	30.0	34.6	33.2	33.0	27.4	26.0	30.0	26.9	29.1
PIKE/SAN ISB.	13.4	13.4	8.9	12.2	12.0	7.2	18.1	10.7	14.5	29.7	13.0	15.9
RIO GRANDE	30.3	26.0	24.0	31.1	26.0	14.1	29.0	36.0	24.0	25.7	30.3	29.1
ROUTT	30.4	21.0	10.0	35.1	29.9	23.6	38.1	36.7	20.0	24.5	10.0	27.1
SAN JUAN	42.1	23.2	22.0	33.1	43.7	27.5	24.1	25.4	22.5	29.9	27.3	18.0
SHOSHONE	12.1	11.9	8.5	7.9	9.1	12.2	12.5	11.4	6.0	13.3	13.3	7.1
WHITE RIVER	39.5	12.0	12.0	33.0	14.0	5.0	29.40	21.2	0.4	37.4	30.3	6.4
NEBRASKA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.4	0.3	0.1
TOTAL	419.1	323.6	250.0	401.3	403.9	273.9	365.3	341.6	250.0	375.9	327.9	329.2

		1984			1985			1986			1987	
R-2 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
ARAPAHO/ROOS.	26.0	4.9	25.9	36.4	0.0	25.0	31.4	17.9	14.0	23.0	14.0	21.5
BIGHORN	21.0	11.4	6.0	13.5	17.3	7.6	14.2	6.5	15.6	13.7	14.5	20.1
BLACK HILLS	124.0	87.0	129.9	134.4	109.1	130.2	119.8	82.9	146.0	120.1	150.0	154.0
GRND ME-UN/GUN	89.2	65.0	18.6	61.9	73.4	37.0	44.7	38.3	46.0	31.6	40.7	25.5
MEDICINE BOW	44.3	40.0	25.4	43.1	64.5	37.5	28.3	10.2	41.5	33.3	42.0	53.2
PIKE/SAN ISB.	31.9	2.6	16.6	26.3	0.3	17.5	24.7	20.7	15.3	21.7	10.3	14.3
RIO GRANDE	33.0	29.2	33.0	34.1	37.4	30.7	29.3	35.4	34.7	33.4	40.3	32.9
ROUTT	63.4	30.3	26.0	54.9	36.0	31.5	44.4	42.9	24.7	29.2	34.5	28.0
SAN JUAN	32.3	27.0	25.7	20.9	25.1	31.3	23.9	21.9	30.2	23.2	21.4	29.3
SHOSHONE	11.9	11.4	10.5	13.3	9.0	15.9	9.5	8.5	13.2	17.0	10.7	18.5
WHITE RIVER	30.9	35.9	13.0	46.6	46.2	26.7	35.3	21.4	27.0	30.1	30.1	27.9
NEBRASKA	0.0	0.9	0.6	0.3	2.0	0.4	2.4	1.4	2.7	0.0	2.6	1.2
TOTAL	490.3	362.4	339.5	486.7	420.6	392.7	424.9	314.0	411.5	386.0	432.7	428.9

		1988			1989	
R-2 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
ARAPAHO/ROOS.	15.9	15.1	14.3	13.2	13.2	24.7
BIGHORN	13.2	21.4	21.3	11.6	13.2	13.3
BLACK HILLS	149.0	145.4	157.2	161.9	129.0	145.0
GRND ME-UN/GUN	26.9	43.0	41.9	42.0	38.6	54.7
MEDICINE BOW	30.8	72.0	54.3	27.9	29.2	44.4
PIKE/SAN ISB.	14.1	0.7	12.1	13.1	0.6	17.3
RIO GRANDE	33.5	30.3	33.1	11.6	39.4	35.3
ROUTT	20.3	30.9	32.6	31.4	21.7	24.2
SAN JUAN	20.0	14.9	27.0	17.3	35.0	30.9
SHOSHONE	14.4	14.3	15.9	19.9	15.7	0.1
WHITE RIVER	20.6	17.7	46.2	27.5	37.1	29.1
NEBRASKA	0.9	0.5	0.4	0.3	0.1	0.1
TOTAL	364.6	413.2	456.3	377.7	354.2	422.1

	1980			1981			1982			1983		
R-3 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
APACHE/SITG.	110.3	77.7	75.0	100.9	102.0	64.0	101.2	96.9	21.0	106.0	115.0	87.1
CARSON	30.3	30.0	23.9	32.6	33.1	25.0	42.5	25.3	14.5	36.0	41.9	19.4
CIBOLA	7.3	5.7	0.9	0.0	5.2	5.9	11.3	0.0	2.4	11.7	3.1	6.9
COCONINO	90.0	79.2	109.2	104.9	93.7	85.2	86.5	70.5	33.2	104.1	77.0	61.3
CORONADO	0.2	7.2	7.2	3.0	3.0	3.0	3.0	2.0	2.0	2.4	2.1	2.1
GILA	47.0	25.7	20.7	46.2	27.5	9.1	41.7	6.4	7.3	54.1	57.0	14.5
KAIBAB	55.7	40.1	61.0	82.6	70.4	58.3	67.0	60.0	40.4	85.1	90.5	80.7
LINCOLN	10.3	19.3	7.7	10.3	9.3	6.7	6.0	9.1	5.5	15.3	15.1	[illegible]
PRESCOTT	5.2	5.1	5.0	3.5	2.3	3.1	4.0	3.5	2.4	4.2	2.7	2.4
SANTE FE	44.0	37.9	29.2	58.9	50.4	37.8	51.3	51.4	30.1	54.5	30.3	45.2
TONTO	11.9	6.7	0.0	12.4	6.2	11.2	9.9	2.5	0.6	0.6	3.7	5.4
TOTAL	443.2	334.0	365.4	484.2	429.9	310.9	420.0	332.4	170.2	483.6	413.0	310.7

	1984			1985			1986			1987		
R-3 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
APACHE/SITG.	136.0	73.6	115.7	115.2	90.7	112.0	102.6	110.6	107.2	80.7	108.9	128.0
CARSON	47.0	42.2	20.0	33.6	24.4	26.4	44.6	31.3	32.4	24.7	26.4	24.7
CIBOLA	9.3	21.2	14.6	11.6	12.6	13.5	11.1	17.3	24.4	7.4	13.0	[illegible]
COCONINO	119.5	75.0	49.3	110.4	93.4	73.1	95.1	67.2	126.7	87.5	81.1	122.4
CORONADO	0.4	2.3	2.3	1.0	2.4	1.9	0.1	1.6	1.0	0.2	1.0	0.8
GILA	41.3	7.1	23.9	31.3	16.6	22.3	33.6	27.4	30.0	32.3	30.2	29.7
KAIBAB	90.4	86.0	72.6	71.2	52.2	89.2	74.0	82.5	72.0	50.7	60.0	85.2
LINCOLN	12.4	7.0	15.5	0.2	17.0	14.0	16.1	21.2	13.2	13.2	17.1	18.7
PRESCOTT	2.3	3.4	4.0	3.3	11.1	0.5	4.0	9.5	11.0	3.7	11.1	[illegible]
SANTE FE	40.2	41.4	52.1	2.9	13.3	48.7	49.9	62.9	53.3	71.5	54.6	58.9
TONTO	9.6	2.5	0.5	10.3	0.0	3.5	7.0	15.2	13.4	7.4	12.0	11.9
TOTAL	479.2	383.3	387.3	405.0	342.5	394.5	440.7	446.7	485.5	487.3	433.2	524.3

	1988			1989		
R-3 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
APACHE/SITG.	75.1	94.1	146.5	86.4	91.2	130.4
CARSON	26.7	24.3	25.0	29.9	27.3	20.5
CIBOLA	11.1	15.7	14.9	3.0	5.0	7.5
COCONINO	91.6	78.4	96.0	97.7	81.3	113.7
CORONADO	0.2	15.7	1.0	0.1	1.0	15.9
GILA	31.7	24.2	79.4	37.6	8.4	33.0
KAIBAB	72.9	74.0	82.2	82.1	70.7	84.1
LINCOLN	11.7	13.1	22.1	12.4	12.4	15.2
PRESCOTT	2.1	8.5	0.6	7.0	9.4	10.3
SANTE FE	43.6	46.3	45.4	26.8	31.3	55.4
TONTO	5.0	11.5	13.3	9.3	10.9	9.0
TOTAL	372.5	408.6	485.2	392.9	357.4	511.0

R-4 FOREST	1980 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1981 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1982 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1983 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
ASHLEY	14.9	10.3	10.4	15.2	12.5	11.2	21.7	15.7	16.9	18.2	10.2	22.0
BOISE	67.5	80.4	73.9	76.5	58.2	76.2	100.4	81.0	47.9	88.7	67.6	78.0
BRIDGER/TETON	20.2	26.1	20.6	14.1	22.0	16.9	30.7	13.1	8.9	34.2	43.0	22.0
CARIBOU	19.5	19.5	16.6	22.4	22.3	19.6	21.3	18.0	13.6	21.3	21.0	21.9
CHALLIS	4.4	5.1	4.7	7.3	7.3	0.5	2.0	2.6	0.4	3.2	2.1	5.4
DIXIE	18.1	18.1	22.7	32.0	25.2	19.4	30.7	13.0	15.2	28.2	27.0	24.5
FISHLAKE	1.5	2.3	0.9	2.7	2.5	1.6	2.9	1.3	1.1	5.5	4.5	1.6
HUMBOLDT	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	1.1	0.9
MANTI-LASAL	3.4	5.5	1.7	3.2	4.0	1.3	6.3	6.2	1.5	6.6	0.3	6.4
PAYETTE	61.9	61.3	38.9	77.3	57.6	50.4	72.5	66.3	70.0	56.2	53.9	62.0
SALMON	37.9	38.7	18.1	30.9	25.7	14.3	20.0	18.3	9.0	16.4	16.4	18.2
SAWTOOTH	13.3	10.3	10.2	21.7	13.0	13.0	24.0	21.7	13.6	21.7	23.9	17.4
TARGHEE	80.0	70.3	74.2	80.0	46.1	76.4	78.1	53.3	73.0	80.3	71.3	66.5
TOIYABE	5.0	4.9	6.1	6.5	5.4	0.5	10.9	10.9	6.2	5.0	5.1	6.3
UINTA	2.7	2.7	1.6	3.2	3.3	1.3	9.6	8.6	13.0	7.1	7.6	7.7
WASATCH	16.0	16.0	7.5	15.3	10.5	11.0	24.1	22.0	20.4	24.4	16.0	20.0
TOTAL	387.3	383.0	308.2	424.4	314.0	332.4	480.1	348.1	381.6	489.0	385.7	361.0

R-4 FOREST	1984 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1985 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1986 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1987 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
ASHLEY	24.7	26.0	18.5	30.7	30.0	23.0	27.1	28.8	28.0	24.1	28.4	24.7
BOISE	108.0	88.7	98.5	82.3	77.1	124.7	134.8	120.4	87.0	97.2	88.3	113.2
BRIDGER/TETON	37.1	25.3	30.9	15.7	12.3	33.0	22.3	32.9	25.2	21.1	21.2	33.0
CARIBOU	17.7	9.4	10.8	16.3	7.0	23.2	24.2	24.2	9.3	10.4	14.7	18.0
CHALLIS	4.5	3.0	2.2	5.1	4.3	4.0	4.7	5.9	3.0	3.9	4.3	-3.0
DIXIE	35.0	31.5	25.2	41.6	32.2	26.0	37.7	38.9	46.0	21.1	30.0	32.9
FISHLAKE	4.2	6.0	4.3	2.2	3.5	3.7	2.4	3.9	5.7	4.6	6.3	4.0
HUMBOLDT	0.0	1.0	4.2	0.0	0.5	0.5	0.2	0.9	0.3	0.0	0.7	0.0
MANTI-LASAL	7.6	6.9	7.4	8.2	8.2	7.3	6.3	4.6	7.3	8.1	5.5	5.7
PAYETTE	40.5	62.0	67.0	77.3	77.1	68.3	87.4	66.9	93.4	78.6	78.6	61.4
SALMON	33.0	9.2	9.9	20.3	9.3	9.3	24.9	40.4	40.2	22.6	20.9	14.7
SAWTOOTH	20.5	14.3	10.3	10.2	13.9	17.0	6.2	10.2	10.7	11.0	10.6	12.0
TARGHEE	73.7	71.4	6.5	70.5	77.0	86.6	75.3	74.9	75.1	77.2	66.9	84.6
TOIYABE	7.0	7.7	0.4	4.0	5.2	6.4	4.3	5.3	5.4	9.1	9.9	5.0
UINTA	1.0	6.4	10.1	1.5	4.3	4.0	5.3	9.9	3.4	7.9	7.7	9.7
WASATCH	13.1	25.7	79.3	15.7	17.0	19.0	13.9	22.2	10.0	11.0	17.1	23.9
TOTAL	430.0	385.9	380.3	409.6	379.6	433.0	441.0	483.7	461.5	400.7	380.1	455.3

R-4 FOREST	1988 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	1989 SOLD MMBF	HARVESTED MMBF
ASHLEY	24.9	28.2	28.7	21.9	22.7	21.5
BOISE	100.2	80.1	108.4	97.9	82.4	92.1
BRIDGER/TETON	1.3	9.4	23.3	17.2	25.5	17.1
CARIBOU	13.3	13.5	14.7	9.2	16.2	18.2
CHALLIS	2.5	2.0	4.4	6.0	6.7	3.2
DIXIE	27.0	28.9	34.0	25.2	27.3	30.2
FISHLAKE	3.1	4.3	5.2	7.0	5.2	4.6
HUMBOLDT	0.0	0.0	1.0	0.0	1.1	1.1
MANTI-LASAL	6.7	9.4	5.4	1.3	4.1	7.9
PAYETTE	74.7	73.7	83.7	85.0	77.0	89.3
SALMON	18.6	21.1	21.9	23.3	22.1	21.0
SAWTOOTH	11.0	7.5	10.2	3.1	9.4	9.6
TARGHEE	73.5	83.0	101.6	70.3	70.3	91.7
TOIYABE	4.2	6.3	16.2	4.3	4.2	3.3
UINTA	1.0	5.7	6.0	2.3	2.3	5.0
WASATCH	12.4	14.9	14.6	14.2	14.2	11.3
TOTAL	374.0	372.9	476.9	393.7	380.4	419.7

R-5 FOREST	1980 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1981 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1982 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1983 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
										1.5	1.7	1.8
ANGELES	2.0	1.6	1.5	1.0	1.4	1.2	1.0	1.4	1.5	2.3	1.6	1.7
CLEVELAND	1.0	1.1	1.1	2.0	1.4	1.2	1.0	1.3	1.2	129.0	147.0	96.2
ELDORADO	148.3	140.0	103.4	137.0	133.1	129.6	135.0	148.2	121.2	6.0	6.1	4.8
INYO	13.0	15.3	15.2	9.0	8.1	5.2	9.0	1.4	11.5	232.0	230.0	122.7
KLAMATH	360.0	255.3	232.0	257.0	200.2	160.4	235.0	243.7	89.1	154.0	170.0	227.1
LASSEN	107.0	100.2	130.7	177.0	104.4	106.6	170.0	172.8	86.7	1.5	1.4	1.4
LOS PADRES	2.3	2.1	2.4	3.0	2.5	2.6	2.5	1.5	1.50	76.0	73.4	70.3
MENDOCINO	77.0	81.0	40.2	95.0	87.3	71.7	64.0	60.4	37.7	54.0	54.7	51.5
MODOC	113.0	111.9	40.2	60.0	60.7	54.1	52.0	52.7	22.6	189.0	199.8	178.9
PLUMAS	251.0	251.0	220.3	160.0	169.7	143.1	172.0	109.2	109.5	9.3	8.3	9.2
SAN BERNARDINO	13.0	13.0	10.1	8.0	9.6	5.7	13.0	9.5	9.9	85.0	87.5	91.1
SEQUOIA	74.0	66.6	60.1	96.3	94.7	60.6	96.0	74.4	56.8	238.5	227.5	251.3
SHASTA/TRINITY	229.0	244.5	100.1	249.0	246.1	176.5	273.0	224.5	96.8	123.5	132.2	93.9
SIERRA	130.0	135.2	93.2	137.0	134.0	87.6	111.0	89.2	58.2	152.0	206.3	129.9
SIX RIVERS	127.0	147.0	103.0	153.0	149.5	114.4	136.0	120.1	57.9	129.0	122.7	121.8
STANISLAUS	137.0	136.6	77.5	116.0	116.4	75.4	173.0	113.3	40.7	151.0	100.0	123.7
TAHOE	147.0	158.3	83.7	150.0	147.4	74.8	143.0	106.6	59.9	4.3	2.1	1.8
LTBMU	4.0	2.0	3.9	4.0	2.9	1.2	4.0	3.0	4.7	1,733.0	1,063.3	1,538.5
TOTAL	1915.0	1953.1	1450.4	1830.0	1,830.2	1,269.7	1732.0	1503.2	875.4			

R-5 FOREST	1984 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1985 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1986 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1987 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
ANGELES	1.0	1.0	1.1	1.5	1.3	1.1	0.9	1.0	1.0	0.70	0.50	0.50
CLEVELAND	1.0	1.0	1.0	1.7	1.7	1.1	1.0	0.7	1.0	0.80	0.70	0.80
ELDORADO	120.0	147.9	92.8	121.0	131.4	119.9	134.9	143.0	144.0	115.30	121.50	214.80
INYO	13.0	18.0	12.7	9.0	15.7	23.4	9.9	14.5	18.9	13.00	14.00	6.00
KLAMATH	227.0	120.7	190.0	210.0	189.6	153.3	157.7	173.6	222.9	185.60	184.90	235.00
LASSEN	172.0	180.1	226.6	148.4	161.1	194.4	144.1	152.4	244.3	147.10	169.60	155.80
LOS PADRES	2.0	0.8	0.9	1.4	1.0	1.1	1.2	0.8	0.5	1.10	1.90	2.10
MENDOCINO	99.0	58.4	105.5	78.2	90.4	89.1	91.0	100.0	83.2	84.20	72.20	81.90
MODOC	52.0	66.3	42.7	40.1	30.7	57.4	44.6	47.0	62.7	42.80	46.50	74.20
PLUMAS	180.0	170.2	182.0	171.0	189.0	174.6	175.3	170.5	205.7	142.30	204.90	236.00
SAN BERNARDINO	10.0	9.0	8.1	10.5	8.1	5.6	6.1	6.0	4.8	103.30	9.50	6.20
SEQUOIA	86.0	55.1	90.5	85.0	75.2	99.9	97.5	65.1	85.1	5.20	106.90	73.80
SHASTA/TRINITY	234.0	198.7	220.1	271.0	215.0	241.0	191.2	180.4	231.0	76.00	208.20	228.00
SIERRA	121.0	95.0	110.4	130.3	130.4	125.3	120.3	122.7	153.8	107.20	85.00	164.80
SIX RIVERS	156.0	120.1	135.9	150.0	154.1	152.8	142.1	129.5	136.1	126.10	145.50	177.30
STANISLAUS	115.0	83.7	92.0	111.2	146.7	92.3	89.0	93.5	103.4	81.70	101.30	152.40
TAHOE	143.0	130.4	143.0	139.9	135.2	133.0	126.7	115.3	153.9	119.40	117.10	148.50
LTBMU	4.5	3.3	3.4	4.5	3.3	2.3	3.3	0.9	1.0	3.70	3.00	1.20
TOTAL	1,736.0	1,457.7	1,857.5	1,633.9	1,679.9	1,664.3	1,497.6	1,508.3	1,854.1	1,522.9	1,394.0	[illegible]

R-5 FOREST	1988 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1989 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
ANGELES	0.4	0.3	0.4	0.2	0.2	0.2
CLEVELAND	0.6	0.5	0.6	0.4	0.4	0.3
ELDORADO	102.1	107.3	142.4	173.1	173.9	189.5
INYO	9.7	14.5	13.1	11.0	11.0	15.1
KLAMATH	306.7	311.7	248.7	184.7	168.7	298.2
LASSEN	144.2	151.1	167.0	175.0	162.5	168.3
LOS PADRES	1.1	0.5	0.5	0.7	0.7	0.7
MENDOCINO	106.5	125.1	134.0	0.0	57.0	109.0
MODOC	53.7	96.3	67.6	0.0	40.5	70.2
PLUMAS	130.5	180.1	237.7	198.6	195.7	195.0
SAN BERNARDINO	176.1	4.1	5.3	5.0	4.3	4.9
SEQUOIA	3.9	58.9	72.0	62.2	49.1	60.2
SHASTA/TRINITY	54.4	243.1	295.9	97.5	175.7	192.5
SIERRA	223.9	135.4	144.0	134.1	136.6	166.5
SIX RIVERS	124.4	137.8	230.1	147.4	107.1	195.0
STANISLAUS	313.6	290.2	185.0	120.9	120.8	186.1
TAHOE	129.6	140.7	255.5	0.0	114.5	120.4
LTBMU	1.6	1.4	1.3	3.4	3.4	2.2
TOTAL	1889.0	1959.0	2173.9	1315.0	1,498.9	1,904.7

R-6		[illegible]			[illegible]			[illegible]			1983	
FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
DESCHUTES	209.3	205.0	176.5	220.3	210.6	193.7	184.1	178.9	145.9	206.1	216.4	212.3
FREMONT	156.6	154.8	119.0	165.3	157.3	129.2	151.8	137.4	109.9	151.7	150.1	126.4
GIF./PINCHOT	531.1	374.2	315.0	615.2	614.7	263.1	512.6	422.4	244.1	431.8	442.4	368.9
MALHUER	222.3	223.2	103.9	234.7	236.0	82.7	184.4	176.9	73.0	195.5	196.7	151.4
MT BAKER/SNOQ.	281.6	303.2	224.8	307.1	319.5	211.8	266.3	289.0	124.5	230.9	248.1	216.3
MT. HOOD	412.4	435.6	349.8	421.9	423.3	277.9	390.8	386.6	176.8	369.6	374.8	358.2
OCHOCO	134.9	136.2	84.4	137.3	139.3	83.5	127.1	113.5	42.8	125.7	133.5	97.1
OKANOGAN	73.0	66.4	74.6	79.9	82.4	81.3	75.0	42.3	18.8	78.5	106.5	78.5
OLYMPIC	383.2	383.3	293.5	372.3	398.6	227.7	341.0	281.5	183.1	333.7	406.4	244.3
ROGUE RIVER	239.0	233.7	162.3	219.2	223.4	179.6	195.9	202.1	79.1	194.9	192.8	170.5
SISKIYOU	217.9	226.5	132.7	200.9	222.7	91.7	175.5	175.0	39.4	194.0	193.0	122.7
SIUSLAW	394.5	394.4	266.4	397.6	428.5	247.5	375.4	370.1	112.0	359.0	369.6	273.0
UMATILLA	197.1	221.1	105.5	183.4	182.1	146.9	156.6	139.0	93.4	169.9	163.6	135.6
UMPQUA	437.4	410.2	202.7	399.5	424.5	197.1	393.2	395.6	130.5	365.1	369.4	267.1
WALL./WHITMAN	205.7	165.8	160.1	224.8	245.9	190.7	219.0	207.9	123.0	182.9	172.1	140.6
WENATCHEE	205.6	209.6	120.0	204.7	203.9	172.2	183.7	160.9	101.0	169.0	192.9	145.8
WILLAMETTE	819.3	788.8	554.0	792.6	755.8	470.7	731.6	730.6	386.7	727.1	731.1	555.0
WINEMA	159.3	158.2	117.4	165.6	164.8	77.2	159.8	154.9	46.9	149.2	151.3	124.6
COLVILLE	97.2	98.2	67.1	97.8	97.8	57.1	96.8	75.2	47.0	108.1	104.8	84.1
TOTAL	5,377.4	5,126.4	3,620.9	5,418.1	5,482.1	3,381.6	4,920.6	4,641.4	2,265.9	4,743.5	4,915.5	3,868.2

R-6		1984			1985			1986			1987	
FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
DESCHUTES	188.0	188.8	244.1	187.6	170.4	291.3	194.1	200.2	222.1	235.7	190.6	225.6
FREMONT	150.0	146.9	120.4	152.7	139.9	161.7	175.0	206.6	202.5	171.0	182.6	197.1
GIF./PINCHOT	400.4	390.4	356.8	374.9	355.9	381.2	451.1	459.9	346.5	477.0	459.3	417.8
MALHUER	222.2	238.4	205.5	223.7	222.0	264.2	244.7	243.6	302.4	260.2	254.0	217.5
MT BAKER/SNOQ.	265.8	329.5	235.6	231.1	219.4	210.9	279.9	291.0	259.0	248.5	266.8	296.7
MT. HOOD	391.0	394.6	386.8	392.3	424.2	400.6	410.5	426.2	413.0	336.3	341.6	428.2
OCHOCO	142.5	146.9	133.6	113.5	113.3	162.0	161.1	163.4	149.4	159.2	166.1	146.1
OKANOGAN	87.9	71.3	54.6	71.6	164.5	62.4	86.2	(44.5)	68.4	91.8	85.9	111.3
OLYMPIC	316.4	313.4	310.4	225.8	179.8	242.7	260.3	230.7	244.8	251.9	254.0	243.4
ROGUE RIVER	203.7	220.2	152.3	207.2	224.6	217.1	198.0	192.0	190.8	207.5	210.2	203.5
SISKIYOU	195.3	130.9	133.9	159.1	211.1	131.6	227.2	225.0	175.5	222.5	227.5	225.2
SIUSLAW	284.1	293.2	341.4	203.4	279.4	307.1	341.8	316.5	317.2	361.3	399.7	364.0
UMATILLA	160.6	159.7	101.9	107.8	178.0	144.4	205.5	140.8	165.1	184.7	169.0	215.5
UMPQUA	391.5	408.7	326.3	307.3	415.7	313.3	419.7	406.3	402.9	426.4	447.1	551.9
WALL./WHITMAN	201.4	253.0	259.4	175.1	152.5	232.7	244.3	209.9	229.8	205.1	215.0	303.7
WENATCHEE	184.9	183.1	185.1	171.8	154.3	213.6	217.4	202.7	226.6	179.6	181.0	221.3
WILLAMETTE	790.3	830.7	609.7	787.3	755.9	775.3	849.8	853.7	750.4	877.0	867.5	899.5
WINEMA	178.4	172.5	189.6	205.4	154.2	163.4	268.6	224.0	213.8	265.2	253.4	255.0
COLVILLE	75.8	81.7	102.1	121.1	119.6	84.8	123.3	104.0	87.0	110.1	121.6	116.7
TOTAL	4,846.2	4,961.9	4,530.5	4,570.7	4,752.5	4,760.3	5,366.5	5,060.0	4,965.2	5271.0	5272.9	5597.2

R-6		1988			[illegible]	
FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
DESCHUTES	227.6	170.5	166.4	132.0	133.6	210.3
FREMONT	154.8	142.7	170.7	173.6	174.3	130.3
GIF./PINCHOT	454.1	459.9	514.2	393.3	168.9	444.4
MALHUER	259.0	255.5	242.4	262.1	265.8	233.7
MT BAKER/SNOQ.	230.7	231.6	248.1	234.0	69.7	108.7
MT. HOOD	331.2	363.5	397.7	289.9	148.7	308.6
OCHOCO	142.1	142.5	127.0	120.1	133.1	147.3
OKANOGAN	82.1	90.0	133.5	76.6	71.7	116.8
OLYMPIC	248.7	212.3	264.3	123.5	55.5	194.4
ROGUE RIVER	190.1	191.3	229.0	103.7	76.6	233.4
SISKIYOU	254.6	229.9	215.7	82.4	42.7	242.5
SIUSLAW	342.1	347.4	423.7	244.8	156.6	317.0
UMATILLA	193.8	164.0	175.8	163.5	159.9	227.2
UMPQUA	404.0	403.3	412.3	426.0	251.4	555.7
WALL./WHITMAN	194.4	168.4	195.1	102.8	161.1	221.9
WENATCHEE	177.5	185.9	186.6	182.1	89.8	197.1
WILLAMETTE	821.0	826.9	907.7	877.5	355.3	854.9
WINEMA	247.4	209.7	262.1	203.8	134.5	255.3
COLVILLE	119.9	123.6	127.5	122.7	134.0	135.3
TOTAL	5056.1	4918.9	5407.8	4164.4	2,011.2	5,230.8

R-8 FOREST	[illegible] OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	[illegible] OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	[illegible] OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1983 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
ALABAMA	86.8	75.3	76.7	72.0	75.4	79.0	75.1	72.1	61.1	77.4	75.2	[illegible]
CHATT.-OCONEE	93.4	89.5	96.6	54.4	47.3	60.1	51.3	47.3	40.1	55.5	55.2	54.9
CHEROKEE	34.4	32.4	28.6	33.8	34.8	27.3	34.0	33.6	26.9	31.8	27.1	33.5
DANIEL BOONE	35.0	19.0	19.7	33.6	23.0	22.9	35.3	24.9	20.1	38.1	36.0	[illegible]
FLORIDA	104.3	104.3	110.8	103.4	103.4	95.8	95.6	95.6	85.2	101.8	104.4	[illegible]
FR. MAR.&SUMT.	111.9	110.9	98.5	107.4	107.4	151.9	101.3	101.4	114.2	105.9	105.4	[illegible]
GEO. WASH.	37.5	34.8	25.7	36.2	40.3	37.4	37.5	33.6	29.9	30.4	34.8	34.3
JEFFERSON	29.9	20.3	15.1	24.1	25.0	17.3	24.0	23.1	17.1	26.5	26.7	[illegible]
KASATCHIE	139.9	149.9	144.3	145.9	141.0	101.0	139.8	130.1	73.7	105.9	105.9	[illegible]
MISSISSIPPI	251.0	246.5	307.2	219.2	213.0	211.0	202.9	200.4	142.4	209.4	209.9	[illegible]
N. CAROLINA	71.0	66.3	52.0	72.4	72.5	67.4	76.0	74.0	46.2	83.9	76.4	67.4
QUACHITA	179.1	179.6	220.3	182.0	181.4	155.7	174.5	150.3	86.2	184.4	199.0	136.4
OZAR-ST.FRAN.	45.5	43.4	38.8	46.1	44.2	40.0	46.0	45.8	23.7	50.1	40.7	43.5
TEXAS	99.6	101.3	63.5	112.0	109.1	73.5	100.3	92.0	49.5	120.5	134.0	68.9
TOTAL	1329.3	1201.5	1297.8	1242.5	1,219.4	1,141.1	1201.6	1125.0	816.3	1309.6	1310.7	[illegible]

R-8 FOREST	1984 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1985 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1986 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1987 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
ALABAMA	90.3	87.4	81.5	88.0	85.0	87.9	87.5	79.6	109.4	80.3	80.8	[illegible]
CHATT.-OCONEE	59.7	57.1	53.0	63.0	54.0	45.9	62.2	66.1	66.6	57.1	52.9	[illegible]
CHEROKEE	41.7	30.7	32.2	39.4	37.4	34.7	34.3	35.0	36.3	35.6	22.7	34.4
DANIEL BOONE	43.0	39.6	20.5	44.7	39.9	20.9	30.9	33.3	42.7	36.5	41.0	[illegible]
FLORIDA	105.3	104.2	120.3	171.7	121.9	111.2	107.9	90.5	120.7	96.7	120.0	116.9
FR. MAR.&SUMT.	110.2	106.8	123.7	113.0	115.0	106.5	104.3	102.3	97.7	102.2	102.0	133.4
GEO. WASH.	46.0	52.5	36.5	51.4	41.7	45.0	40.1	37.1	32.2	30.4	31.0	35.9
JEFFERSON	35.1	26.7	21.2	35.2	33.9	20.2	26.6	27.4	30.6	20.3	20.6	25.7
KASATCHIE	167.7	166.4	130.4	263.4	207.0	217.0	185.5	165.3	230.7	140.9	136.2	156.9
MISSISSIPPI	230.0	209.0	199.5	240.3	221.3	223.3	232.0	211.9	250.0	230.4	194.4	209.0
N. CAROLINA	86.3	75.6	60.5	86.9	66.0	60.0	70.1	60.4	71.1	71.1	50.6	65.4
QUACHITA	195.3	172.0	172.4	189.4	190.3	201.5	184.7	209.0	229.2	199.1	210.4	232.5
OZAR-ST.FRAN.	64.4	59.0	50.1	59.0	49.7	51.5	48.0	48.4	60.0	62.1	66.0	74.6
TEXAS	146.5	128.9	157.6	155.6	139.3	131.6	142.9	120.0	173.7	122.2	131.2	123.8
TOTAL	1422.3	1324.7	1275.4	1551.0	1,412.0	1,302.0	1366.6	1295.9	1560.7	1302.9	1260.6	[illegible]

R-8 FOREST	[illegible] OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	1989 OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
ALABAMA	86.0	87.9	83.0	91.2	81.3	74.7
CHATT.-OCONEE	69.2	66.9	66.3	73.3	73.5	60.9
CHEROKEE	31.8	23.3	32.8	38.5	36.2	30.9
DANIEL BOONE	40.4	37.6	46.8	50.4	45.9	33.2
FLORIDA	94.8	94.7	123.3	95.4	95.3	121.3
FR. MAR.&SUMT.	99.4	99.3	114.2	100.4	90.3	84.7
GEO. WASH.	30.0	45.4	40.5	30.0	37.9	41.8
JEFFERSON	20.9	31.6	29.8	31.2	31.8	21.2
KASATCHIE	129.9	120.6	164.2	129.2	127.5	100.4
MISSISSIPPI	232.6	211.8	244.4	232.6	223.1	157.2
N. CAROLINA	66.0	56.8	69.8	76.9	72.1	77.4
QUACHITA	177.4	180.1	225.4	110.2	119.0	157.1
OZAR-ST.FRAN.	60.0	61.8	61.6	67.2	65.7	64.3
TEXAS	55.2	51.3	117.3	64.5	63.4	86.4
TOTAL	1210.4	1185.2	1410.5	1205.0	1169.4	1127.5

		1981			1982			1983			[illegible]	
R-9 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
CHEQUAMEGON	61.5	49.2	45.0	50.6	55.1	40.9	52.0	53.0	52.3	58.4	59.0	42.2
CHIPPEWA	75.2	79.7	54.9	71.1	83.3	47.7	73.3	54.7	64.2	82.4	63.2	39.6
HURON/MANISTEE	69.3	59.4	49.4	86.7	61.2	86.3	68.7	64.3	79.9	68.4	54.1	83.9
CLARK/M.TWAIN	81.9	80.6	86.9	63.1	62.6	57.9	90.0	52.9	55.5	59.3	62.5	62.7
NICOLET	74.0	84.0	11.0	60.5	54.7	90.0	54.2	40.1	57.5	82.2	67.0	67.9
OTTAWA	69.0	57.2	49.4	54.9	49.8	45.3	56.1	55.7	42.0	57.2	42.7	49.1
SHAWNEE	10.4	14.7	5.6	16.0	11.0	3.2	16.3	7.2	11.0	10.4	21.9	12.0
SUPERIOR	63.6	50.0	60.2	77.1	71.5	61.6	79.1	68.0	70.0	75.0	46.9	62.1
HIAWATHA	57.3	45.0	20.9	51.0	30.1	34.5	45.4	40.0	30.9	54.4	43.9	42.1
WAYNE/HOOSIER	20.5	16.0	573.7	21.0	20.7	18.3	19.2	18.1	16.0	20.0	19.7	23.6
ALLEGHENY	50.6	41.7	51.9	53.4	62.4	47.2	46.0	49.0	55.0	50.0	50.6	61.1
GREEN MOUNTAIN	19.7	16.0	7.1	18.7	17.7	9.1	13.0	9.9	12.5	14.0	11.6	7.1
MONONGAHELA	47.1	15.5	63.9	35.0	34.7	10.9	30.0	25.4	25.3	30.4	33.1	17.2
WHITE MOUNTAIN	37.2	35.6	37.3	30.7	39.9	29.5	43.0	40.4	30.0	30.4	40.4	30.2
TOTAL	720.3	642.2	1125.2	680.1	643.7	550.3	682.4	509.3	609.5	681.3	632.2	634.5

		1984			1985			1986			1987	
R-9 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
CHEQUAMEGON	69.4	62.6	66.7	74.0	74.2	71.3	65.6	64.6	71.5	66.9	67.5	67.6
CHIPPEWA	73.0	72.2	70.7	20.1	58.5	75.5	59.9	67.4	76.4	67.1	69.1	92.9
HURON/MANISTEE	70.6	76.7	81.3	78.0	96.2	88.7	72.7	84.0	82.3	74.1	84.4	89.9
CLARK/M.TWAIN	69.6	72.5	70.7	79.0	74.0	70.0	75.2	73.4	77.0	72.9	73.1	85.5
NICOLET	75.1	80.5	74.4	84.7	81.0	88.6	87.2	88.1	62.5	87.9	91.5	97.9
OTTAWA	75.0	72.9	60.3	72.1	69.2	58.3	65.6	49.4	53.4	64.0	76.2	59.1
SHAWNEE	22.0	14.7	8.6	22.7	7.0	6.0	17.9	11.1	10.0	17.4	13.0	17.6
SUPERIOR	92.0	83.7	90.6	97.0	89.6	90.7	73.1	86.6	83.6	82.0	83.3	87.4
HIAWATHA	63.1	64.7	56.3	63.3	56.2	60.4	59.0	50.9	40.9	55.6	50.9	64.3
WAYNE/HOOSIER	22.6	11.2	14.7	23.1	22.5	18.9	12.7	11.5	16.7	9.1	8.7	14.8
ALLEGHENY	71.0	72.7	50.1	72.0	61.3	58.4	72.1	77.4	84.0	70.9	76.5	93.7
GREEN MOUNTAIN	10.0	15.4	11.3	16.3	13.1	13.1	13.3	11.1	10.5	12.9	13.3	9.3
MONONGAHELA	41.9	25.5	24.6	41.0	30.6	10.6	37.4	37.7	24.2	34.3	31.3	38.1
WHITE MOUNTAIN	41.0	30.0	34.8	43.2	46.1	32.3	29.7	29.5	29.7	29.4	27.0	38.7
NEW YORK LU	0.0	0.5	0.4	0.0	0.9	0.7	0.0	0.4	− 0.5	0.0	0.1	0.1
TOTAL	808.7	763.0	733.5	789.0	782.0	737.5	742.2	753.1	732.6	745.3	775.5	852.3

		1988			1989	
R-9 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
CHEQUAMEGON	62.6	60.7	60.7	67.1	60.7	63.4
CHIPPEWA	74.0	76.2	71.3	85.1	85.1	70.4
HURON/MANISTEE	77.0	86.5	82.0	94.1	91.4	85.5
CLARK/M.TWAIN	71.6	71.6	67.1	69.2	69.1	64.9
NICOLET	86.0	86.0	93.0	87.7	84.2	94.0
OTTAWA	59.6	61.9	63.0	68.5	75.7	76.3
SHAWNEE	10.5	11.1	12.2	0.1	0.1	5.3
SUPERIOR	83.0	84.5	82.0	97.0	98.6	96.2
HIAWATHA	60.9	64.3	70.4	65.0	67.6	65.1
WAYNE/HOOSIER	8.4	8.7	14.5	8.4	8.0	11.4
ALLEGHENY	67.7	71.0	78.1	82.2	84.1	65.2
GREEN MOUNTAIN	13.2	12.1	10.9	12.2	8.9	13.0
MONONGAHELA	40.1	34.5	50.7	40.5	38.4	36.9
WHITE MOUNTAIN	29.0	30.3	37.0	30.6	30.3	30.5
NEW YORK LU	0.1	0.3	0.1	0.0	0.3	0.0
TOTAL	744.5	763.5	802.6	809.3	810.2	784.7

		[illegible]			[illegible]			[illegible]			[illegible]	
R-10 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
Chugach	40.0	1.1	1.4	16.6	11.1	0.0	39.6	10.1	0.0	10.2	0.8	1.1
Stik W. Tong	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chat W. Tong	520.0	198.4	480.1	543.1	147.6	388.6	470.5	70.5	371.0	458.8	81.2	250.5
Ketc S. Tong	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	560.0	199.5	481.5	559.7	158.7	388.6	510.1	80.6	371.0	469.0	82.0	251.6

		1984			1985			1986			1987	
R-10 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
Chugach	2.1	28.7	18.3	2.0	20.3	20.1		117.0	34.8	0.0	52.5	17.0
Stik W. Tong	87.0	0.0	0.0	0.0	0.0	0.0		0.2	0.0	67.4	66.0	112.6
Chat W. Tong	140.4	9.3	63.8	431.7	21.4	211.9	394.4	72.5	105.4	110.9	1.6	0.7
Ketc S. Tong	247.9	14.3	179.4	0.0	0.0	0.0		0.0	151.2	189.6	49.7	206.1
Total	477.4	52.3	261.5	433.7	41.7	232.0	394.4	189.7	291.4	367.9	169.8	336.4

		1988			1989	
R-10 FOREST	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF	OFFERED MMBF	SOLD MMBF	HARVESTED MMBF
Chugach	70.5	26.3	29.4	70.5	58.0	82.5
Stik W. Tong	80.1	0.8	132.9	99.8	8.2	107.8
Chat W. Tong	2.0	0.8	1.0	0.5	3.3	1.5
Ketc S. Tong	196.4	42.1	234.0	150.2	30.9	254.3
Total	349.0	70.0	397.3	321.0	100.4	446.1

SUMMARY OF TIMBER DATA FROM FOREST PLANS (as of 5/11/90)

		Allowable Sale Quantity	TSPQ		Year New Plan was
		Pref. Alt. 1/	Pref. Alt. 2/	Potential Yield 3/	Effective 4/
		-----Avg.	Annual MMBF/Yr.-----		
R-1	*Beaverhead	17	17	24	86
	*Bitterroot	33	33	33	87
	*Clearwater	173	173	255	87
	*Custer	4	4	8	87
	*Deerlodge	23	23	62	87
	*Flathead	100	108	124	86
	*Gallatin	21	21	50	87
	*Helena	15	15	27	86
	*Idaho Panhandle	280	280	375	87
	*Kootenai	227	227	278	87
	*Lewis and Clark	12	14	17	86
	*Lolo	107	122	180	86
	*Nezperce	108	111	134	87
	R-1 Total	1120	1148	1567	
R-2	*Arapaho-Roosevelt	30	44	102	84
	*Bighorn	15	16	61	85
	*Black Hills	152	152	155	83
	*GM-Umcomp.-Gunn.	36	36	84	87
	*Medicine Bow	28	45	112	85
	*Nebraska	0	1	0	84
	*Pike-San Isabel	26	26	54	84
	*Rio Grande	36	36	79	85
	*Routt	38	54	125	83
	*San Juan	42	42	133	87
	*Shoshone	11	12	12	86
	*White River	25	44	115	86
	R-2 Total	439	508	1032	
R-3	*Apache-Sitgreaves	119	137	145	87
	*Carson	35	42	56	86
	*Cibola	8	9	12	87
	*Coconino	99	128	115	87
	*Coronado	3	4	0	86
	*Gila	30	36	58	86
	*Kaibab	77	87	91	88
	*Lincoln	16	19	18	86
	*Prescott	1	7	6	87
	*Santa Fe	46	55	99	87
	*Tonto	8	17	18	85
	R-3 Total	442	541	618	
R-4	*Ashley +	21	21	27	86
	Boise	87	105	212	90
	*Bridger-Teton	12	19	81	90
	*Caribou	11	26	31	85
	*Challis	3	5	69	87
	*Dixie	26	37	31	86
	*Fishlake	3	13	23	86
	*Humboldt	0	0	0	86
	*Manti-Lasal	4	6	36	86
	*Payette	81	94	107	88
	*Salmon	22	24	56	88
	*Sawtooth	10	12	33	87
	*Targhee +	86	88	63	85
	*Toiyabe	5	7	21	86
	*Uinta	2	8	15	87
	*Wasatch-Cache	16	37	33	87
	R-4 Total	389	502	838	

SUMMARY OF TIMBER DATA FROM FOREST PLANS (as of 5/11/90)

		Allowable Sale Quantity	TSPQ		Year New Plan
		Pref. Alt. 1/	Pref. Alt. 2/	Potential Yield 3/	was Effective 4/
		-----Avg.	Annual MMBF/Yr.-----		
R-5	*Angeles	0	1	4	87
	*Cleveland	0	2	5	86
	*Eldorado	137	146	138	89
	*Inyo	7	12	12	88
	Klamath # (see note)	0	0	264	
	*Lake Tahoe Basin MU	0	4	0	88
	Lassen	154	199	178	
	*Los Padres	0	4	11	88
	Mendocino	93	102	91	
	Modoc	52	64	75	
	*Plumas	266	292	246	88
	*San Bernadino	3	5	19	89
	*Sequoia	97	102	95	88
	Shasta-Trinity	226	248	313	
	Sierra	125	136	152	
	Six Rivers	175	198	284	
	Stanislaus	134	165	151	
	Tahoe	179	213	189	
	R-5 Total	1648	1893	2227	
R-6	*Colville	123	147	115	88
	Deschutes +	202	225	219	
	*Fremont +	140	158	155	89
	Gifford Pinchot	388	427	411	
	Malheur	245	261	270	
	Mt. Baker-Snoqualmie	170	192	204	
	Mt. Hood +	255	347	384	
	*Ochoco	115	125	137	89
	*Okanogan	63	76	93	89
	Olympic (incl. SYU's	186	206	341	
	Rogue River	137	148	214	
	*Siskiyou	160	176	168	89
	*Siuslaw	335	348	436	90
	Umatilla	154	209	133	
	Umpqua	340	402	417	
	Wallowa-Whitman	143	215	183	90
	*Wenatchee	136	146	177	90
	Williamette	568	710	850	
	Winema	199	211	172	
	R-6 Total	4059	4729	5079	
R-8	*Alabama NF's	75	78	92	86
	*Carribbean and Lug.	0	0	0	86
	*Chattahochee-Oconee	102	103	83	85
	*Cherokee	41	42	104	86
	*Croatan-Uwharrie	9	9	22	86
	*Daniel Boone	53	56	61	87
	*Florida NF's	100	102	97	86
	*Francis Marion	59	60	71	85
	*George Washington	49	49	113	86
	*Jefferson	36	36	52	85
	*Kisatchie	128	130	147	85
	*Mississippi NF's	254	254	269	85
	*Nantahala and Pisga	73	73	117	87
	*Ouachita	159	159	234	86
	*Ozark-St. Francis	60	60	81	86
	*Sumter	64	66	85	87
	*Texas NF's	126	126	102	87
	R-8 Total	1388	1403	1730	

SUMMARY OF TIMBER DATA FROM FOREST PLANS (as of 5/11/90)

		Allowable Sale Quantity Pref. Alt. 1/	TSPQ Pref. Alt. 2/	Potential Yield 3/	Year New Plan was Effective 4/
		-----Avg.	Annual MMBF/Yr.-----		
R-9	*Allegheny	95	100	92	86
	*Chequamegon	70	71	70	86
	*Chippewa	79	79	86	86
	*Green Mountain	16	16	20	87
	*Hiawatha	70	70	83	86
	*Hoosier	11	11	19	87
	*Huron-Manistee	82	82	70	86
	*Mark Twain	96	105	106	86
	*Monongahela	43	43	141	86
	*Nicolet	97	97	61	86
	*Ottawa	78	79	111	86
	*Shawnee	20	20	20	86
	*Superior	97	97	166	86
	*Wayne	8	8	9	88
	*White Mountain	35	35	49	86
	R-9 Total	897	913	1103	
R-10	*Chugach 8/	17	17	42	79
	*Tongass (1979)	450	498	839	87
	R-10 Total	467	515	881	
ALL	NFS TOTAL	10849	12152	15075	

Denotes final Forest plan Effective (99 Forests have final plans and 23 are in the draft stage).

+ Denotes departure sale schedule in the preferred alternative.

A draft Forest Plan and EIS have not yet been filed for the Klamath National Forest. (Under the existing plan, the potential yield for the Klamath NF is 264 MMBF/year.)

1/ Allowable Sale Quantity (ASQ) - average annual chargeable volume planned for sale during the first Forest plan decade. The ASQ is calculated in cubic feet, and then converted to board feet for reporting purposes.

2/ Timber Sale Program - includes the ASQ (chargeable volume) plus any additional material (non-chargeable volume) planned for sale during the first Forest plan decade.

3/ Total potential yield from Timber Management Plans in effect prior to Forest Plans.

4/ The "Year" column is the year in which the Forest Plan became effective. Use ASQ and/or TSPQ on or after this year and Potential Yield before tis tyear.

GREEN MOUNTAIN NATIONAL FOREST

The Green Mountain National Forest is currently being funded at 58% of its forest planning level. Similar to national trends, commodity programs appear to take precedence over non-commodity programs. I am encouraged by the proposed increases for the Green Mountain National Forest up to 70% of the FY 91 forest plan level.

486. Question: Can I expect this kind of incremental commitment up to the full planning level in the future?

Answer: We are not in a position to speculate on future funding levels. Within any given funding constraint, we will continue efforts to achieve a better balance across all resources.

QUESTIONS SUBMITTED BY SENATOR DON NICKLES

WINDING STAIR MOUNTAIN NATIONAL RECREATION AND WILDERNESS AREA

The Winding Stair Tourism and Recreation Advisory Council created by Public Law 100-499 recently recommended several high priority projects which could be funded in fiscal year 1991 to continue development at Winding Stair. The projects are as follows:

Lodge feasibility study.	$ 150,000
Phase II for equestrian camp and Kerr Site	500,000
Rehabilitation of reconstruction of Cedar Lakes Facilities	1,200,000
New bridge across creek for access to equestrian camp	76,000
Total	$1,926,400

487. Question: I would appreciate the comments of the Forest Service on this list as well as their plans to support these and other projects in fiscal year 1991.

Answer: Ouachita National Forest personnel have worked very closely with the Winding Stair Tourism and Recreation Advisory Council on the project proposals listed below.

(a) Lodge Feasibility Study: This study is needed to help determine the economic feasibility and type of lodge development that might be compatible with the development of the Winding Stair National Recreation Area. The Forest is currently working with the Council on an outline for the study.

(b) Equestrian Camp and Kerr Site: Recreation construction funding in FY 1990 includes Phase I of the equestrian camp and a classroom exhibit facility for the Kerr site. Phase I includes planning and design for the total project plus construction of Phase I facilities. The Kerr site is the existing recreation site on the Talimena Drive known as the Kerr Arboretum and Nature Center.

The FY 1990 funding will provide one new loop for the new Equestrian Camp or an addition to the existing camp; however, two or three loops are included in the final site plan.

A master design narrative for the entire NRA is being prepared. The NEPA process is underway for all facilities. All NEPA compliance will be completed in FY 1990. By January 1991, construction plans and drawings will be completed for all facilities funded in FY 1990. Construction for approved projects will start in March 1991 with the remaining FY 1990 funding. No additional facilities can be built within the FY 1991 budget.

(c) Cedar Lakes Facilities: One of the primary attractions of the Winding Stair National Recreation Area is the existing Forest Service facilities at the Cedar Lake Recreation Complex. These facilities were built 30 to 40 years ago and need to be reconstructed and upgraded. The Council has indicated that one of the highest priorities for the National Recreation Area should be the improvement of existing facilities and the addition of new features at these sites to provide a higher level of service. The Forest has conducted a survey. The survey includes a list of items needing rehabilitation and their estimated costs. Preliminary plans are available for this work.

(d) Cedar Creek Low-water Bridge across Forest Service Road 7270.

The current low-water crossing of Cedar Creek becomes flooded during heavy rains. This presents a safety problem to users, especially the equestrians who cross this creek to access the camp and overnight camping facilities. Preliminary engineering plans have been developed for this project.

The Ouachita National Forest can utilize the proposed funds for the above projects in FY 1991.

On March 7, 1990, the Winding Stair Multiple Use Advisory Council sent a letter to Agriculture Secretary Clayton Yeutter recommending that the annual budget for the Ouachita National Forest be increased in the wilderness and special use areas created by P.L. 100-499. The Council further recommended that permanent personnel positions be established and added to the present Forest organization to implement and administer the area and its facilities.

488. Question: When can we expect the Forest Service to provide the Winding Stair areas with a basic operating budget and adequate personnel?

Answer: Future program budget proposals will address this matter more explicitly. Due to the timeframe in which the FY 1991 budget was developed, it does not include changes that will increase operation and administration funding for the NRA and the two wilderness areas. The Forest is exploring opportunities to adjust its FY 1991 allocation to address these costs.

The Forest Service will continue to evaluate the recommendations of the Winding Stair Multiple Use Advisory Council concerning the budget and personnel needs for these areas.

The Winding Stair Wilderness Areas contain a number of private inholdings. Recently the Multiple Use Advisory Council estimated that $760,000 would be necessary for the Secretary to acquire these inholdings on a willing buyer, willing seller basis.

489. Question: Have any landowners with inholdings in the wilderness or other special areas contacted the Forest Service about selling their property?

Answer: Yes, Forest Service has been contacted by numerous landowners about selling their land in the seven designated areas.

490. Question: If the opportunity arose, does the Forest Service have adequate funds to obtain these properties on a willing buyer, willing seller basis?

Answer: Yes, funds could be reallocated from higher priority acquisition projects.

QUESTIONS SUBMITTED BY SENATOR ALAN K. SIMPSON

OIL AND GAS LEASING

491. Question: The General Accounting Office testified at a September 28, 1989, House Subcommittee Oversight Hearing that there was a need to revise Forest Plans to adequately address the environmental effects of oil and gas leasing. Last year, you instructed the field offices to complete these studies by 1992. It is estimated that completion of the necessary environmental studies by the Forest Service by 1992 will cost over $13 million. Since the cost of completing these environmental studies is not included in the President's budget, how does the Forest Service intend to meet its obligations for environmental review within the proper time frame so as not to delay or jeopardize its oil and gas leasing program?

Answer: We have prioritized the Forests with the highest potential for oil and gas development and intend to proceed with analysis of these high priority areas. We anticipate delays in completing the necessary environmental studies on some of the high priority areas.

492. Question: The Forest Service continues to address important environmental concerns relating to its timbering, grazing, and mineral leasing programs. We are witnessing a number of situations whereby the Regional and District Foresters are making decisions about environmental reviews in order to avoid threatened litigation -- often delaying future timber or leasing activities -- but have no resources whereby to complete or even undertake the environmental reviews. How do you intend to address this issue in the future?

Answer: Continuing interpretations by the courts have resulted in the constant need to strengthen the environmental review process. This has increased the cost of doing business significantly in the areas mentioned above. We continue to update our costing data to reflect the increases and incorporate this information on budget requests. When funding is less than necessary to implement Forest Plan we prioritize the allocation and expenditures of these funds to cover the highest priority needs.

493. Question: The Secretary's regulations for Oil and Gas Resources became effective April 20, 1990. I thank you for your fine efforts in preparing and negotiating those regulations. The Forest Service will now play a more active role in approving oil and gas leases and operations on the 191 million acres of National Forests and Grasslands. A total of 40 area oil and gas analyses need to be completed to maintain the leasing program in the National Forest System. In FY 1991, oil and gas analyses on 9 priority areas are scheduled to be amended. The Department budget funded the leasable program at $1.7 million about the FY 1990 level in order to support these analyses. The President's budget does not include this funding. How do you plan to meet your obligations to complete these analyses?

Answer: We are placing our efforts where the most good can be done with the resources available. Because of priorities and essential field administration of ongoing leasing operations, revised estimates are that 6 of the scheduled analyses will be substantially complete in FY 1991. The remaining 3 contained in our earlier schedule will be started in FY 1991 but not completed until FY 1992.

494. Question: Activity in the locatable mining program has increased because of a surge in the number of proposed new mines and the need for additional environmental review in order to meet the NEPA requirements. There are currently 1200 operation mines ranging in size from one person operations to large open pit mines operated by multi-national corporations. Recent estimates indicate that 150 mines are expected to become operational in the next few years as compared to recent trends of about 20 to 25 new mines becoming operational annually. Compliance with NEPA must be assured when the plans for these new mines are processed. In addition, other projects may be put on hold because limited staff resources are taxed by a single large project. Constrained resources can result in delays of two years or more for new mining operations. The President's budget is inadequate to effectively perform the environmental analyses and field administration required in the Minerals program. I understand that the department budget originally provided for locatable minerals to be funded $2.5 million above the FY 1990 level. The President's budget does not include this funding. What actions do you intend to take to meet the obligations of the Forest Service in the regard within the administratively-imposed constraints?

Answer: Due to the nondiscretionary nature of these projects we will proceed to approve these projects with environmental analysis consistent with the level of funding. Approval of operations will be given priority over field review and compliance of ongoing operations.

FUNDING LEVELS-FOREST PLANS VS ACTUAL ALLOCATIONS

I have corresponded with you before on this matter, but have not yet received a reply. I am concerned about a problem that exists regarding the discrepancy between the funding levels that are established in the Master Forest Plans and the actual distribution of those funds.

495. Question: What are the administrative problems and hurdles that must be overcome in order to make these funding amounts consistent with one-another?

Answer: Our basic budget formulation and allocation process is intended to be directly consistent with forest land management plans, however, the Federal budget process introduces contemporary considerations of the Administration and of the Congress which can be unrelated to the forest plans. Typically, the amounts of dollars and output targets included in the Appropriation Act will vary from the national accumulation of forest plans. Our allocation relates to the budget proposals from each region to the appropriation, output targets, earmarks, and changes since the budget was prepared. The region has the responsibility of making allocations to individual forests using the same concepts.

496. Question: How much participation do the regional and district supervisors have in allocating these funds and "prioritizing" the various programs for each specific forest when deviations from the master plan are necessary?

Answer: Each Forest Supervisor and Regional Forester has considerable opportunity to prioritize their funds for implementing Forest Plans. They do this by submitting several levels of budget data that range from significantly lower up to full implementation of Forest Plans. After funds are appropriated this data is used as a basis to allocate funds to the regions and forests in accordance with the priorities. The Washington Office is in daily contact with regional offices and discusses these matters regularly. In addition, a current review is underway to determine if provisions should be made for additional participation.

QUESTIONS SUBMITTED BY SENATOR MARK HATFIELD

FOREST RESEARCH

497. Question: There are indications in the budget for Forestry Research that some new projects are being contemplated, such as the efforts in "new Perspectives in Forestry" and in Global Warming. As a result of these new efforts, are there projects that were already started, but uncompleted and not unfunded in the FY91 budget?

Answer: The items in our Capability Increase Lists that begin with the word "Restore" are research underway in FY 1990 which would not be continued in the President's Budget for FY 1991. This work would cease or be terminated as expeditiously and efficiently as possible. The intent of New Perspectives is to emphasize development and application of technology needed to integrate the uses of forest and grassland resources with the maintenance of biological diversity, forest health, and sustained productivity. Much of the proposed program is based on acceleration of current research and initiation of ecosystem oriented studies. Other national initiatives, such as Global Change, also depend on continuation of our foundation research programs and the establishment of new studies for timely solutions to critical problems.

498. Question: On the Agency Capability Increase List, there are a number of items (Items FPR#1, FPR#2, TMR#16, FER#14, FER#25) relating to the cooperative COPE project (Coast Oregon Productivity Enhancement), which involve a number of Federal and State agencies, Oregon State University, and private cooperators. What research is being unfunded as a result of these reductions? Are these unfunded projects part of an on-going long-range plan of research accomplishment that will now be delayed or cancelled; and if so, what are the projected land management effects of not having the knowledge that was expected as a result of the unfunded research? What effect are these reductions expected to have on the cooperative relationships that have been developed?

Answer: The FY 1991 President's Budget reduces the Forest Service's contribution to COPE by $375,000. The most significant impacts would be to terminate research needed to effectively regenerate and manage highly productive forests in western Oregon and Washington and to develop biological controls for root diseases. Research on the impacts of forest management on salmon and trout habitat and to evaluate the role of soil microorganisms in maintaining forest productivity would be reduced. Increased efforts to do integrated research at the landscape level would be foregone.

Yes. These projects are part of the overall COPE research effort.

The impacts of these reductions will be greater uncertainty about how to best integrate management to maintain forest productivity while protecting and enhancing the fisheries resource. Managers will not have the silvicultural guidelines necessary to effectively regenerate and manage highly productive Coast Range forests, the technology to evaluate soil-microbiological impacts on long-term forest productivity, or the biological control option for laminated root rot disease.

The Coastal Oregon Productivity Enhancement Program (COPE) is a unique cooperative research and education effort supported by Oregon State University, the USDI Bureau of Land Management, and the US Forest Service. The $375,000 reduction in the Forest Service contribution to COPE would reduce the overall effort, resulting in the termination of some important research activities. The reduction is not expected to be detrimental to this partnership.

499. Question: There have been a series of long-term silvicultural research projects conducted at or coordinated by the Olympia Silvicultural Lab in Olympia, Washington. A number of items on the Agency Capability Increase List (Items TMR#2, FPHR#5, FPHR#17 total $540,000 -- additional monies are likely needed to restore items that did NOT appear on the President's Budget) relate to that Lab and to research in Douglas-fir silviculture. With the pressures extant to set aside vast areas of Douglas-fir forest in the Pacific Northwest for various purposes - recreation, wilderness, wildlife habitat, etc. - there is a heightened need for silvicultural information regarding the efficient production of wood fiber on the lands that remain available for that use. What are the effects (in terms of currently planned output levels, the continuation of planned output levels, or of potential increase in output levels) from the postponement, curtailment, and cancellation of research that will result from the non-funding of projects at the Olympia Lab and other Douglas-fir silvicultural research projects in the Pacific Northwest?

Answer: Non-funding of silviculture projects at the Olympia Forestry Sciences Laboratory will reduce research efforts to develop new silvicultural methods for managing Douglas-fir forests under the concept of "New Perspectives in Forestry". Much of our capability in growth and yield modeling will be impacted and cooperative work with Region 6 on silviculture of mixed conifer and upper-slope forests will be terminated. In addition, much of our research on fertilization, long-term site productivity, and hardwood silviculture will be terminated.

Effects will also extend to timber quality research delaying studies to link alternative silviculture treatments with the value of products that can be produced from managed Douglas-fir stands. The development of methodology to evaluate the effects of management under "New Perspectives" on timber quality will also be delayed.

BLUE MOUNTAIN NATURAL RESOURCES INSTITUTE

500. Question: The Blue Mountains National Resources Institute has been established (in FY 1990) to coordinate a cooperative program of research into the multiple benefits that can be produced on those Eastern Oregon and Eastern Washington forests. The 1991 Agency Capability Increase List

shows seven items related to this Institute (FER#3, FER#32, FPR#17, FPR#42, FPR#44, TMR#49, and FPHR#25). How much funding does the President's FY 1991 Budget provide for this research effort; and, what would be the additional benefits that would accrue from the addition of those seven items from the Agency Capability Increase List? Which agencies and Universities are cooperating in this project; and, what would be the likely effects on those cooperators from the President's FY 1991 Budget and from the addition of those seven items from the Agency Capability Increase List?

Answer: The President's Budget for FY 1991 does not include funding for the Blue Mountain Natural Resources Institute. However, the budget does include $2,950,000 for the Bend and LaGrande, Oregon, and Wenatchee, Washington, Forestry Sciences Laboratories which are involved in critical research for the region.

Addition of the seven items (FER #3 & 32; FPR #17, 42 & 44; TMR #49, and FPHR #25) from the FY 1991 Forest Service Capability Increase List would restore and accelerate research essential to the base program of the Institute. Benefits from the proposed accelerated research would be increased productivity of forested rangelands for elk, deer, and domestic livestock; better management guides for nongame birds that require cavities, snags, and large trees for nesting habitat; validation of a spruce budworm population prediction model for forest pest managers; development of forest-fertilization techniques for integrated management of spruce budworms, timber growth, and forage production for livestock and wildlife; and knowledge of the impacts of harvest levels, site treatments and stand characteristics on forest productivity.

Agencies and universities cooperating with the Institute include BLM, Washington Department of Natural Resources, Oregon Department Forestry, Oregon Department of Fish and Wildlife, Washington State University, Oregon State University and Oregon State College.

Several cooperators including the Oregon Department of Fish and Wildlife, have made substantial commitments of funds and research areas to the base program of the Institute. Under the President's Budget we will reduce our level of commitment to these partners.

SUBCOMMITTEE RECESS

Senator McClure. The subcommittee will stand in recess until Monday, April 30, at 2 p.m., when we will hear testimony from the Department of Energy regarding the Clean Coal Technology Program and the Fossil Energy Research and Development Program.

[Whereupon, at 4:48 p.m., Monday, April 23, the subcommittee was recessed, to reconvene at 2 p.m., Monday, April 30.]

LIST OF WITNESSES, COMMUNICATIONS, AND PREPARED STATEMENTS

Page

Adams, Robert McC., Secretary, Smithsonian Institution ... 375
  Prepared statement ... 376
Anderson, Dean W., Under Secretary, Smithsonian Institution ... 375
Armstrong, Hon. William L., U.S. Senator from Colorado, questions submitted by ... 1024

Baker, Robert, Southeast Region, Atlanta, National Park Service, Department of the Interior ... 753
Bermel, Peter F., Assistant Director for Programs, U.S. Geological Survey, Department of the Interior ... 121
Blanchard, Bruce, Deputy Director, U.S. Fish and Wildlife Service, Department of the Interior ... 891
Bond, Hon. Christopher S., U.S. Senator from Missouri, questions submitted by ... 1026
Boschwitz, Hon. Rudy, U.S. Senator from Minnesota, questions submitted by ... 251
Brown, Eddie F., Assistant Secretary, Bureau of Indian Affairs, Department of the Interior ... 253
Brown, J. Carter, Director, National Gallery of Art ... 739
  Prepared statement ... 740
Buffington, John D., Regional Director, Research and Development, Washington, DC, U.S. Fish and Wildlife Service, Department of the Interior ... 627
  Biographical sketch ... 633
Burdick, Hon. Quentin N., U.S. Senator from North Dakota, questions submitted by ... 697, 834
Bumpers, Hon. Dale, U.S. Senator from Arkansas, questions submitted by ... 699, 836, 1027
Burns, Hon. Conrad, U.S. Senator from Montana, questions submitted by ... 1030
Buterbaugh, Galen L., Regional Director, Denver, CO, U.S. Fish and Wildlife Service, Department of the Interior ... 627

Cables, Herbert S., Jr., Deputy Director, National Park Service, Department of the Interior ... 753
Cochran, Hon. Thad, U.S. Senator from Mississippi, questions submitted by ... 728, 859
Cohen, Philip, Chief Hydrologist, Water Resources Division, U.S. Geological Survey, Department of the Interior ... 121
Cook, John E., Southwest Region, Santa Fe, National Park Service, Department of the Interior ... 753

Davis, J. Michael, Assistant Secretary for Conservation and Renewable Energy, Office of the Assistant Secretary for Conservation and Renewable Energy, Department of Energy ... 1
  Biographical sketch ... 11
  Prepared statement ... 5
Davis, Lee, Chief, Concessions Division, Washington, DC, National Park Service, Department of the Interior ... 753
DeConcini, Hon. Dennis, U.S. Senator from Arizona, questions submitted by ... 334, 594, 688, 805, 1032
Detchon, B. Reid, Principal Deputy Assistant Secretary, Office of the Assistant Secretary for Conservation and Renewable Energy, Department of Energy ... 1
  Biographical sketch ... 11
Domenici, Hon. Pete V., U.S. Senator from New Mexico, questions submitted by ... 114, 245, 369, 732, 863, 1048

Page

Edwards, Gary, Assistant Director, Fisheries, U.S. Fish and Wildlife Service, Department of the Interior ... 627
Evans, Anne B., Administrator, National Gallery of Art ... 739
Evans, John L., Deputy Assistant Secretary, Natural Resources and Environment, Forest Service, Department of Agriculture ... 739, 903
  Prepared statement ... 905
Evison, Q. Boyd, Alaska Region, Anchorage, National Park Service, Department of the Interior ... 753

Fowler, Hon. Wyche, Jr., U.S. Senator from Georgia, questions submitted by ... 1052

Garn, Hon. Jake, U.S. Senator from Utah, questions submitted by ... 1052
Gallegos, Lou, Assistant Secretary, Policy, Management and Budget, Office of the Secretary, U.S. Fish and Wildlife Service, Department of the Interior, letter from ... 666
Gerst, Jay L., Assistant Director, Policy Budget and Administration, U.S. Fish and Wildlife Service, Department of the Interior ... 627
Gritman, James C., Regional Director, Twin Cities, MN, U.S. Fish and Wildlife Service, Department of the Interior ... 627

Hatfield, Hon. Mark O., U.S. Senator from Oregon, questions submitted by ... 250, 622, 865, 1054, 1099
Hayes, Patrick A., Deputy to the Assistant Secretary for Trust and Economic Development, Bureau of Indian Affairs, Department of the Interior ... 253
Herrick, Daniel, Treasurer, National Gallery of Art ... 739
Hollings, Hon. Ernest F., U.S. Senator from South Carolina, questions submitted by ... 836

Inouye, Hon. Daniel K., U.S. Senator from Hawaii, questions submitted by ... 1078
Itteilag, Anthony L., Director of Budget, Department of the Interior ... 891

Johnston, Hon. J. Bennett, U.S. Senator from Louisiana, questions submitted by ... 677, 794, 1080
Jessup, Philip C., Jr., Secretary-General Counsel, National Gallery of Art ... 739

Kaplan, Dennis, Office of Budget and Program Analysis, Forest Service, Department of Agriculture ... 903
Kelley, Carol, Administrative Assistant to the Deputy Director, National Gallery of Art ... 739
Kriz, Willis, Chief, Land Resources Division, Washington, DC, National Park Service, Department of the Interior ... 753

Lambertson, Ronald E., Regional Director, Boston, MA, U.S. Fish and Wildlife Service, Department of the Interior ... 627, 891
Lautenberg, Hon. Frank R., U.S. Senator from New Jersey, questions submitted by ... 735, 869
Lawler, Mary Ann, Chief Budget Operations, Office of Budget, U.S. Fish and Wildlife Service, Department of the Interior ... 627
Leahy, Hon. Patrick J., U.S. Senator from Vermont, questions submitted by ... 112, 684, 800, 802, 1080
Leonard, George M., Associate Chief, Forest Service, Department of Agriculture ... 903

Mandle, Roger, Deputy Director, National Gallery of Art ... 739
Marcy, Kristine M., Deputy Director, Office of Construction Management, Bureau of Indian Affairs, Department of the Interior ... 253
McCain, Hon. John, U.S. Senator from Arizona, questions submitted by ... 624
McClure, Hon. James A., U.S. Senator from Idaho, questions submitted by ... 94, 183, 349, 457, 606, 701, 842, 996
Mills, Walter R., Deputy to the Assistant Secretary for Operations, Bureau of Indian Affairs, Department of the Interior ... 253
Mintzmyer, L. Lorraine, Rocky Mountain Region, Denver, National Park Service, Department of the Interior ... 753
Morgan, Benjamin A., Chief Geologist, Geologic Division, U.S. Geological Survey, Department of the Interior ... 121
Morgenweck, Ralph O., Assistant Director, Fish and Wildlife Enhancement, U.S. Fish and Wildlife Service, Department of the Interior ... 627
Morehead, John M., Associate Director, Operations, letter from ... 803

Page

Nickles, Hon. Don, U.S. Senator from Oklahoma, questions submitted by ... 366, 619, 729, 859, 1096

Odegaard, Charles H., Pacific Northwest Region, Seattle, National Park Service, Department of the Interior ... 753
Olsen, David L., Assistant Director, Refuges and Wildlife, U.S. Fish and Wildlife Service, Department of the Interior ... 627
Overbay, James C., Deputy Chief, National Forest System, Forest Service, Department of Agriculture ... 903

Parisian, Edward F., Deputy to the Assistant Secretary and Director of the Office of Indian Education Programs, Bureau of Indian Affairs, Department of the Interior ... 253
Pearson, Bill F., Associate Director, Office of Environmental Health and Engineering, Indian Health Service, Public Health Service, Department of Health and Human Services ... 477
Peck, Dr. Dallas, Director, U.S. Geological Survey, Department of the Interior ... 121
  Prepared statement ... 124
Plenert, Marvin L., Regional Director, Portland, OR, U.S. Fish and Wildlife Service, Department of the Interior ... 627
Porvaznik, Dr. John, Associate Director, Office of Health Programs, Indian Health Service, Public Health Service, Department of Health and Human Services ... 477
Pulliam, James W., Jr., Regional Director, Atlanta, GA, U.S. Fish and Wildlife Service, Department of the Interior ... 627

Ragone, Stephen, E., Acting Assistant Director for Research, U.S. Geological Survey, Department of the Interior, biography of ... 137
Reid, Hon. Harry, U.S. Senator from Nevada, questions submitted by ... 837
Rhoades, Dr. Everett R., Director, Indian Health Service, Public Health Service, Department of Health and Human Services ... 477
  Biographical sketch ... 485
  Prepared statement ... 479
Rice, William L., Deputy Chief, Administration, Forest Service, Department of Agriculture ... 903
Richardson, Linda L., Assistant Director of Administration for Financial Management, Bureau of Indian Affairs, Department of the Interior ... 253
Ridenour, James M., Director, National Park Service, Department of the Interior ... 753, 877
  Prepared statement ... 755
Roach, Milburn H., Executive Assistant to the Director, Indian Health Service, Public Health Service, Department of Health and Human Services ... 477
Roache, William H., Budget Officer, National Gallery of Art ... 739
Robertson, F. Dale, Chief, Forest Service, Department of Agriculture ... 903
Rogers, Jerry L., Associate Director, Cultural Resources, National Park Service, Department of the Interior ... 753
Rudman, Hon. Warren B., U.S. Senator from New Hampshire, questions submitted by ... 861

Sesco, Jerry A., Deputy Chief, Research, Forest Service, Department of Agriculture ... 903
Sheaffer, C. Bruce, Comptroller, National Park Service, Department of the Interior ... 753
Simpson, Hon. Alan K., U.S. Senator from Wyoming, questions submitted by ... 1097
Sirmon, Jeff M., Deputy Chief, Programs and Legislation, Forest Service, Department of Agriculture ... 903
Smith, Richard N., Deputy Director, U.S. Fish and Wildlife Service, Department of the Interior ... 627
Spear, Michael J., Regional Director, Albuquerque, NM, U.S. Fish and Wildlife Service, Department of the Interior ... 627
Starr, Lowell E., Chief, National Mapping Division, U.S. Geological Survey, Department of the Interior ... 121
Stevens, Hon. Ted, U.S. Senator from Alaska, questions submitted by ... 242, 365, 714
Stewart, Frank, Director of State and Local Assistance Programs, Office of the Assistant Secretary for Conservation and Renewable Energy, Department of Energy ... 1

Page

Stieglitz, Walter O., Regional Director, Anchorage, AK, U.S. Fish and Wildlife Service, Department of the Interior 627
Streb, Alan J., Deputy Assistant Secretary for Conservation, Office of the Assistant Secretary for Conservation and Renewable Energy, Department of Energy 1
Suttenfield, Nancy D., Director, Office of Planning and Budget, Smithsonian Institution 375

Turner, John F., Director, U.S. Fish and Wildlife Service, Department of the Interior 629, 891
  Biographical sketch 633
Tynan, Kathleen F., Budget Officer, U.S. Fish and Wildlife Service, Department of the Interior 627, 891

West, Allan J., Deputy Chief, State and Private Forestry, Forest Service, Department of Agriculture 903
Williams, Dennis P., Deputy Assistant Secretary, Budget, Indian Health Service, Public Health Service, Department of Health and Human Services 477

SUBJECT INDEX

DEPARTMENT OF AGRICULTURE

Forest Service

Page
Accounting system, all resources 936
Additional committee questions 960
Appalachian integrated pest management 956
Appeals 951
Archeological protection 918
Beaverhead National Forest 937, 938
Budget:
  Concerns about research 956
  Forest Service 940
  Increases 944
  Request 903
  Research 912
Campgrounds, closed 950
Challenge cost share 924
Communications site fees 919
Construction funding 914
Criteria for land swaps 926
Farm bill, 1991 923
Fire condition 924
Firebreaks 922
Firefighting needs 921
Fish and game management 915
Fish and wildlife 943
Forest Service employment loss 939
GAO 937
  Approach 936
Global warming research 913
Gypsy moth:
  Potential defoliation 957
  Research 955
  Treatment options 958
Harwood:
  Industry 951, 952
  Inventory 955
  Training and manufacturing complex 952
Hurricane Hugo 921
  Assistance 923
Jack Ward Thomas Report 929
Job Corps Program 954
Joint Forest Service Supervision Group 949
Juneau laboratory 913
Lake Tahoe deadwood 917
Land exchange authority 925
Las Huertas Canyon 920
Management of subsistence on Federal lands 915
Mercer County, WV 951
Military land exchange 928
National Forest Service lands 944
National Forest System 100th anniversary 916
Northwest research 912

Page
Oil and gas 947
Oilspill recovery 914
Payette National Forest 950
Pipeline 946
Princeton, WV, as training center 953
Recreation:
    Use 943
    User fees 934
Reforestation 950
Road maintenance 942
Roadless area 947
Salvage sale personnel 924
Spotted owl:
    Impact 930
    Mexican 920
Stoneville research 927
Timber:
    Bridges 904, 908
    Construction 909
    Contracts 928
    Costs of 908
    Durability of 908
    Harvest 938
    Program 946
    Receipts 945
    Sales:
        Alaska 910
        Below cost 918, 934
    Salvage 924
    Supply volume 911
Timber Bridges Information Resource Center 909
Tree planting initiative 950
User fees for broadcasting antenna 919
Washington and regional overhead costs 916
Wildlife and fish habitat management 945
Woodworking training 953

DEPARTMENT OF ENERGY

OFFICE OF THE ASSISTANT SECRETARY FOR CONSERVATION AND RENEWABLE ENERGY

Additional committee questions 51
Advanced materials 45
Alternative Motor Fuels Act 36
Buildings and community systems 21
Elimination of one engine contractor 34
Energy:
    Conservation R&D 2
    Current situation 12
    Efficiency 13
    National strategy 2
    Savings 13
Engines:
    Advanced gas turbine 33
    Ceramic 32
Environmental benefits of conservation 13
Fuels 30
    Alternative plans 30
    Demonstration of alternative 37
Funding to continue projects 27
High temperature materials laboratory 46
Indoor air quality 23
    Funding 23
Metals initiatives 24
    Outlook for 26
Niche markets 21
    For conservation technologies 19

Page
Petroleum overcharge funds 47
Price assumptions, impact of 29
Staffing levels 49
State and local assistance program 47
Transportation 28, 32
West Virginia University 37
Vehicles, electric and hybrid 37, 39

DEPARTMENT OF HEALTH AND HUMAN SERVICES

PUBLIC HEALTH SERVICE

INDIAN HEALTH SERVICE

Additional committee questions 500
Closing of Schurz 494
Closure of facilities 498
Contract health care 493
Cost increases 495
Dental health services 493
Facilities priority system 497
Health care, access to 495
Licensed physicians 490
Loan forgiveness 494
Population growth 496
Programs:
  High priority 492
  Loan repayment 488
Private insurance collections 490
Retention problems 487
Vacancy rates 488

DEPARTMENT OF THE INTERIOR

BUREAU OF INDIAN AFFAIRS

Additional committee questions 289
Alaska timber inventory 255
BIA staff, average grade of 256
Components of control program 281
Crownpoint Institute 285
Dams, safety of 277
Departmental water policy 270
Enrollment survey 276
Fallon 268
Federal acknowledgment process 279
Forestry program outputs 283
Gaming:
  Class III 265
  Commission 262
    Operation of 263
  Illegal operations 267
  Land acquisition for 265
  St. Regis Mohawk Reservation 264
  Use of fiscal year 1990 funds 266
Indian:
  Education 284
  Gaming Act 263
Institutionalized:
  Care providers 258
  Handicapped 257
Irrigation systems 283
Johnson-O'Malley 261
Law enforcement 286
  Comprehensive assessment of 287
National Judicial College 278
Negotiating teams 269
Nevada water claims 268

Page
Noxious weed eradication 282
Prairie dog control 280
Pyramid Lake 269
Substance abuse:
  Counselors 260
  Education 261
Tribal courts 278
Trust funds management 276
Walker River 269
Water rights negotiations 267
Western Shoshone land judgment 275
White House Conference 284

NATIONAL PARK SERVICE

Action on opportune situations 776
Additional committee questions 794, 960
Affirmative action program 774
America the Beautiful and Legacy '99 760
Archeological resources 780
  Protection 786
Battlefields 768, 770
Benefits of fee collection 788
Budget:
  Base reductions 763
  Request 753, 877
Canyon Rim Visitor Center 880
Carlsbad Caverns National Park 778
Channel Islands National Park 790
Church universal and triumphant 771
City of Rocks National Reserve 781
Clean air amendments 789
Committee's appreciation cited 793
Concessionaire contracts 775
Construction 760
Craters of the Moon National Monument 785
Denali National Park and Preserve 790
Grandview State Park 879, 881
Great Basin National Park 789
Hagerman Fossil Beds National Monument 784
Harpers Ferry:
  Bridge 883
  Conservation Laboratory 886
  National Historic Park 787, 882
Helicopter 761
Historic preservation fund 760
Hot Springs National Park 766
Inspector general's report 773
John F. Kennedy Center for the Performing Arts 791
Lake Mead National Recreational Area 787
Land acquisition 760
Maintaining quality staffing 778
Maintenance employees 762
Manassas National Battlefield Park 785
Natchez:
  National Historical Park 764
  Trace Parkway 765
National:
  Natural landmark program 779
  Park reserves 782
  Recreation and preservation 759
  Study of battlefields 769
New River Scenic Parkway 882
Operation of the National Park System 758
Park concessions 779
  Contracts 772
Park Service professionals working with State and city personnel 780

Page

Presidio, the ... 792
Quality of National Park Service operations ... 777
Revenues:
  Concessionaire fee, use of ... 774
  Fee, use of ... 777
Rocky Mountain National Park ... 768
Sanitation problems—Lake Mead ... 789
Santa Monica National Recreational Area ... 767
Solicitor's opinion and legislation ... 783
Subsistence hunting in Alaska ... 761
Thurmond, WV ... 880
Wheeling, WV, study ... 888
Williamsport Preservation Training Center relocation ... 887

U.S. FISH AND WILDLIFE SERVICE

Additional committee questions ... 677
Alaska subsistence ... 671
America the Beautiful ... 634
  Proposal ... 640
Archeological resource inventory ... 675
Bosque Del Apache NWR ... 674
Budget:
  Amendment ... 636
  Fiscal year 1991 request
  Highlights of ... 634
  Request ... 627, 891
Candidate species awaiting listing ... 641
Congressional action ... 636
Dam reconstruction:
  Cost sharing ... 672
  Funding for ... 673
Dam replacement ... 672
Deep Fork NWR acquisition ... 674
Desert tortoise ... 638
Dexter NFH ... 675
Endangered species:
  Proposal ... 639
  Listing ... 641
Fire costs, emergency ... 664
Funding for hydropower relicensing ... 644
Habitat conservation plans ... 642
  Funding ... 638
  Nevada ... 638
Hatchery operations ... 661
Hurricane damage relief ... 664
Inland/Great Lakes hatchery operations ... 662
Lake Elmer Thomas Dam ... 671
Land acquisition ... 662
Maintenance ... 659
  Management system ... 660
National Training Center ... 891
  Design ... 897
  Environmental exhibits ... 895
  Land acquisition ... 896
  Planning ... 892
  Site selection ... 893
New initiatives ... 637
Nongame ... 642
Northeast hydropower relicensing ... 643
Office of Training and Education ... 894
Ohio River Islands ... 898
  Fiscal year 1991 funding ... 899
Refuge revenue sharing ... 663
Stillwater WMA ... 659
Training reprogramming ... 897
Wetlands ... 634

Page

Wichita Mountains Visitor Center 674

U.S. Geological Survey

Additional committee questions 172
Budget request 121
Coastal and wetlands processes 156
Earthquake emergency supplemental funds 149
Geographic and spatial analysis 148
Global climate change 137
Landsat funding 142
Low-level radioactive waste disposal 159
Mineral resource assessments 158
National water quality assessment program 160
Nevada Gazetteer of geographic names 143
Nevada seismic network and staffing 153
Searchlight, NV 159
Systems, advanced cartographic 144
USGS global change program 139
Volcano, Mount Redoubt 154
Water resources:
  Cooperative program 169
  Research institutes 170
Yucca Mountain project 160

NATIONAL GALLERY OF ART

Art donations 743
Curator of photography 748
Extension programs 749
Facilities expansion 744
Fiftieth anniversary 747
Fundraising 745
National sculpture garden 742
Photography conservation 748
Security 741
Special exhibition funding 746
Visitor attendance 750

SMITHSONIAN INSTITUTION

Additional committee questions 409
African-American programming 402
Air and Space Museum extension 386
American Indian, National Museum of the 386, 402
  Role of 403
Budget:
  Priorities 383
  Request 375, 404
Budgetary problems, impacts of current 385
Conservation research 403
Cultural pluralism 383
Federal programs in greenhouse research 405
Funding for summer hours 384
Global change research 383
Greenhouse gases and tropical forests 398
Impacts of fiscal year 1990 absorptions 393
Infrastructure:
  Needs 394
    Fiscal year 1991 395
  Problems 382
  Support 387
Major scientific instrumentation 394
Museum gallery closings 387
Museums in American education, role of 401
Repair and restoration backlog 395
R&R funding requirements 397

Page

Smithsonian:
  - Activities in national education 402
  - Minority hiring at the 403
  - Museum activities across America.......... 400
  - Quincentenary Program 403
  - Trust fund resources.......... 383, 404

Washington Post news articles.......... 391

West Virginia facility, study on 406

O